359

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE St.
DENVER, COLORADO

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TRADE NAME	MODEL	SET AND FOLDER No.
Admiral	Ch. 20SZ4EF, PS Tel. Rec.	359-1
Airline	GRX-1650A, GRX-1651A, GSL-1650A, GSL-1651A	359-2
Airline	WG-4026A, B, WG-4027A, B, WG-5038A, B, WG-5039A, B Tel. Rec.	359-3
Coronado	TV3-9397A Tel. Rec.	359-4
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General Electric	9T001, 9T002 ("T" Line) Tel. Rec.	359-7
Masco	AFR	359-8
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Policalarm	PR-9	359-12
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RCA Victor	8-X-8D, J, L, N (Ch. RC-1167)	359-14
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Sylvania	2101E, H, RE, TU, 2202E, PI, TU (Ch. 1-607-5, -6)	359-16
Zenith	Z510G, R, W (Ch. 5Z10)	359-17

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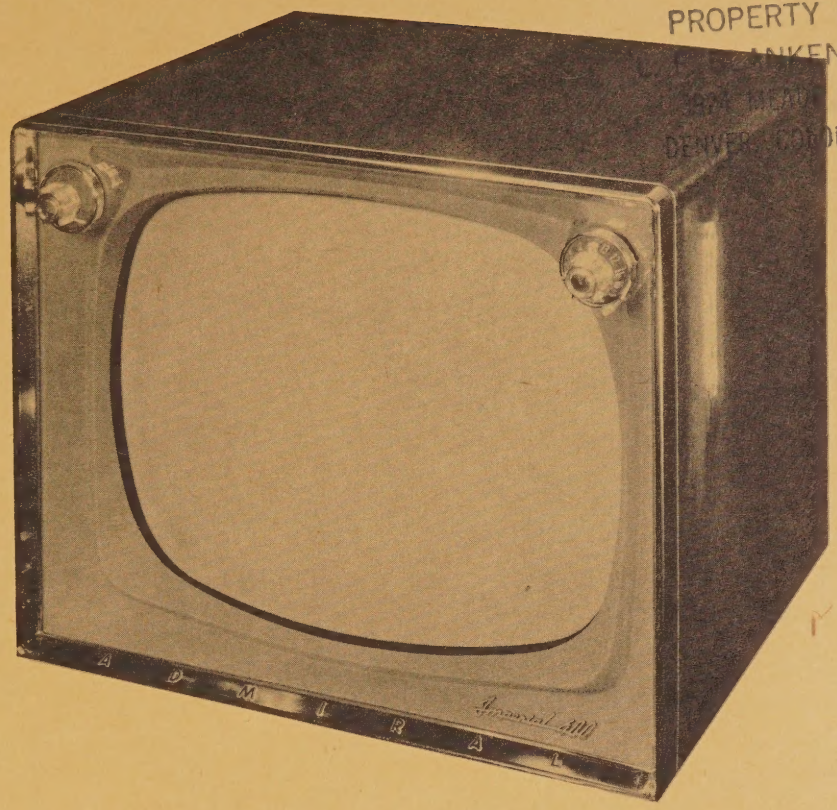

ADMIRAL MODEL TS323B1 (Ch. 20SZ4PS)

TRADE NAME	Admiral	MODELS	CHASSIS
		CS323B2, CS323B3, CS323B26, CS323B27	20SZ4EF
		TS323B1, TS323B2, TS323B2BZ, TS323B3, TS323B3L	20SZ4PS
MANUFACTURER	Admiral Corp., 3800 W. Cortland St., Chicago 47, Illinois		
TYPE SET	Television Receiver		
TUBES	Twenty		
POWER SUPPLY	110-120 Volts AC, 60 Cycles	RATING 190 Watts, 1.7 Amp. @ 117 Volts AC	
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF,	Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)	

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ADMIRAL CHASSIS
20SZ4EF, PS

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DISASSEMBLY INSTRUCTIONS

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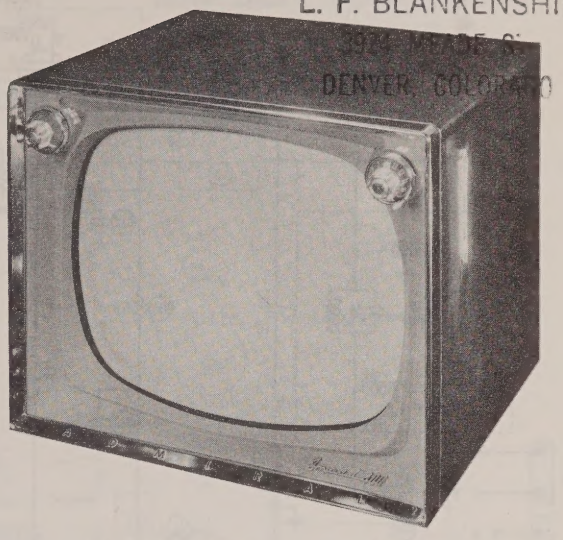
CHASSIS REMOVAL

1. Remove 4 push-on type control knobs from the front of the set.
2. Unclip and remove rear cover.
3. Remove 2 phillips screws holding escutcheon on the side.
4. Remove 2 metal screws holding control panel.
5. Remove picture tube socket, Ion trap, yoke clamp, yoke, speaker plug and HV lead.
6. Remove 4 chassis bolts from the bottom.
7. Remove the chassis.
8. Remove 2 hex nuts and the speaker with audio output transformer attached.

PICTURE TUBE REMOVAL

1. Remove rear cover, picture tube socket, Ion trap, yoke clamp, yoke and HV lead.
2. Remove safety glass as outlined in "Picture Tube and Safety Glass Removal".
3. Remove 4 hex nuts and the picture tube from the front of the set.



MODELS	CHASSIS
CS323B2, CS323B3, CS323B26, CS323B27	20SZ4EF
TS323B1, TS323B2, TS323B2BZ, TS323B3, TS323B3L	20SZ4PS

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF oscillator is possible by removing the channel selector and fine tuning knobs. Set the fine tuning at the center of its range. The adjustments are accessible, one at a time, as the channel selector is rotated. Adjust for best picture and sound.

PICTURE TUBE SAFETY GLASS CLEANING

1. Remove 4 push-on type control knobs from the front.
2. Remove the 2 screws from the bottom of the safety glass frame.
3. Pull bottom of frame out and down removing both the safety glass and mask.

SPECIAL ADJUSTMENTS

A. Noise Gate

1. Set noise gate control fully counter clockwise.
2. Tune in strongest channel in area.
3. Advance noise gate control to point where picture just becomes stable.
4. Check on other channels and retouch adjustment, if necessary.

NOTE: If rotated too far clockwise, the picture may be unstable.

B. Focus

The focus may be varied by the position of a strap on the base of the picture tube. The strap can be connected between pins 6 and 10 or 6 and 2. Readjust the Ion trap for the best focus consistent with maximum brightness.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (A10) located on top of chassis.

FUSES

One fuse is used for LV power supply protection. (For location see tube placement chart.)

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube. Rotate the two rings around the neck of the tube until the picture is properly centered.

ADMIRAL CHASSIS
20SZ4EF, PS

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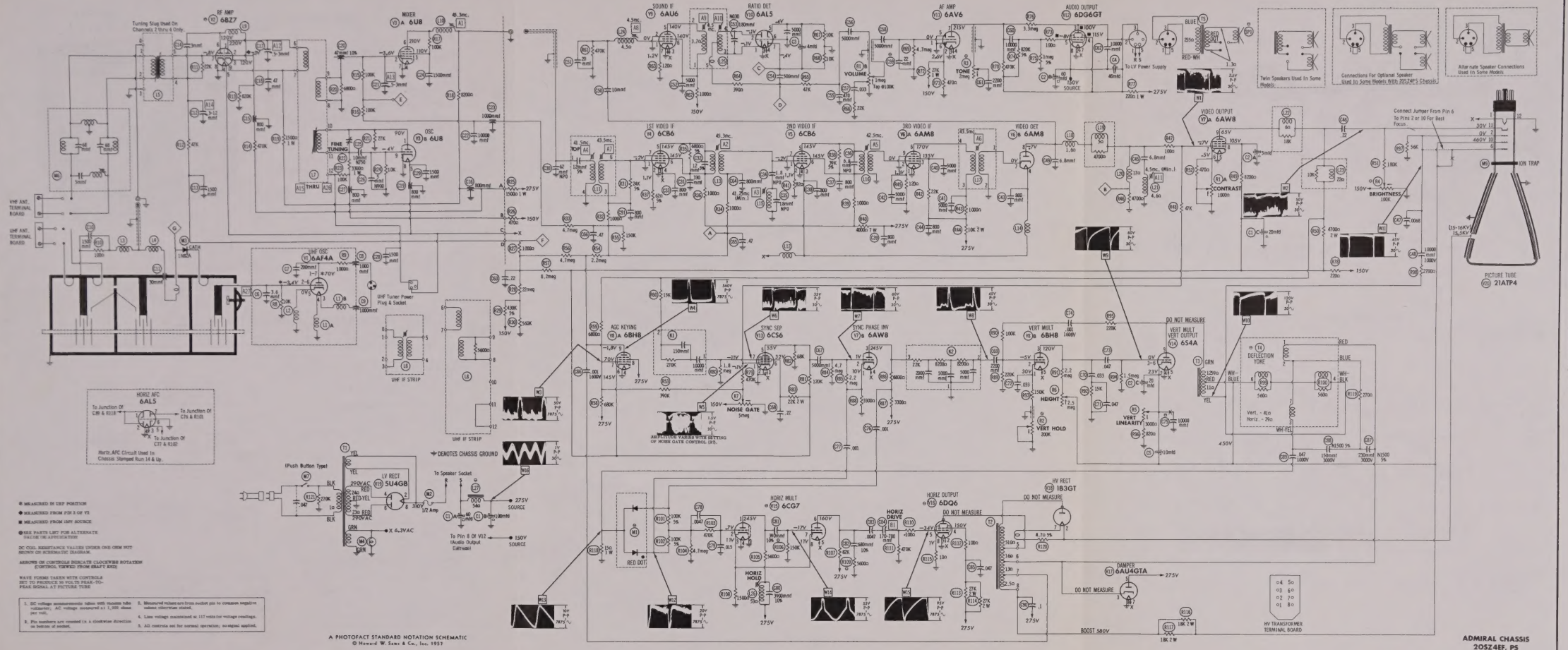
RF AMP
MIXER
SOUND IF
RATIO DET
AF AMP
AUDIO OUTPUT
1ST VIDEO IF
2ND VIDEO IF
3RD VIDEO IF
VIDEO DET
VIDEO OUTPUT
AGC KEYING
SYNC SEP
SYNC PHASE INV
VERT MULT
VERT OUTPUT
HORIZ AFC
HORIZ MULT
HORIZ OUTPUT
HV RECT
LV RECT
DAMPER
PICTURE TUBE
ION TRAP
DEFLECTION YOKE
VOLUME
CONTRAST
BRIGHTNESS
HEIGHT
VERT HOLD
HORIZ HOLD
HORIZ DRIVE
VERT LINEARITY
NOISE GATE
FINE TUNING
VHF ANT. TERMINAL BOARD
UHF ANT. TERMINAL BOARD
UHF IF STRIP
HV TRANSFORMER TERMINAL BOARD
DENOTES CHASSIS GROUND
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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ADMIRAL CHASSIS 20SZ4EF, PS

TUBE PLACEMENT CHART

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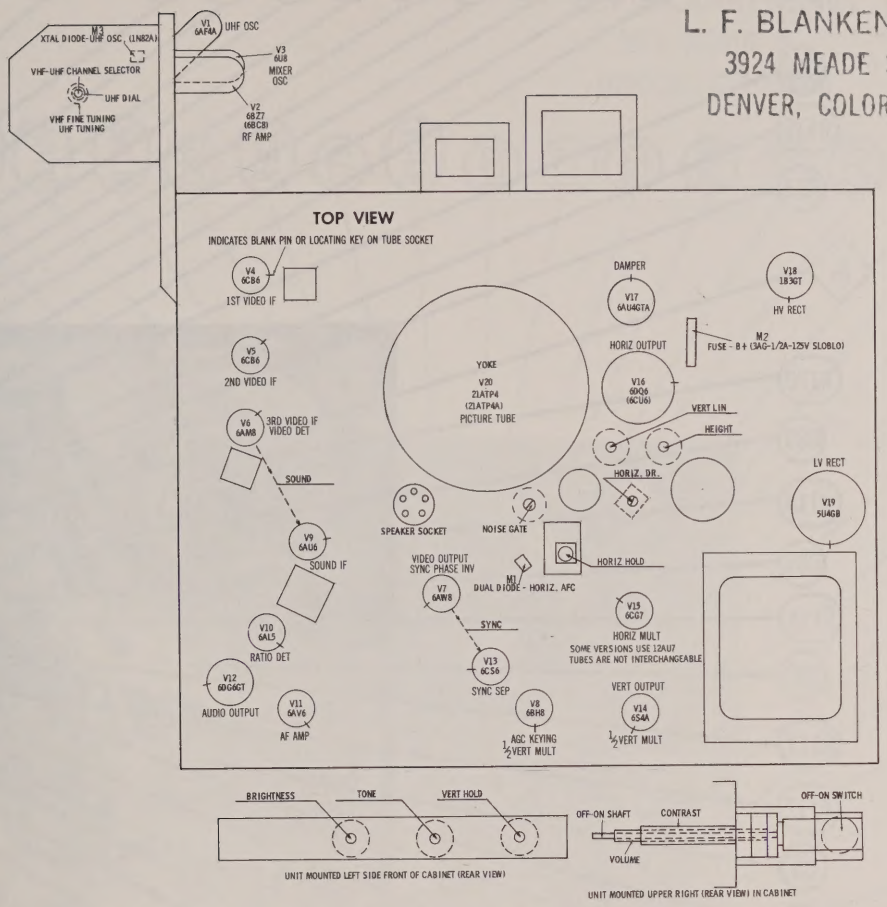


TUBE FAILURE CHECK CHART

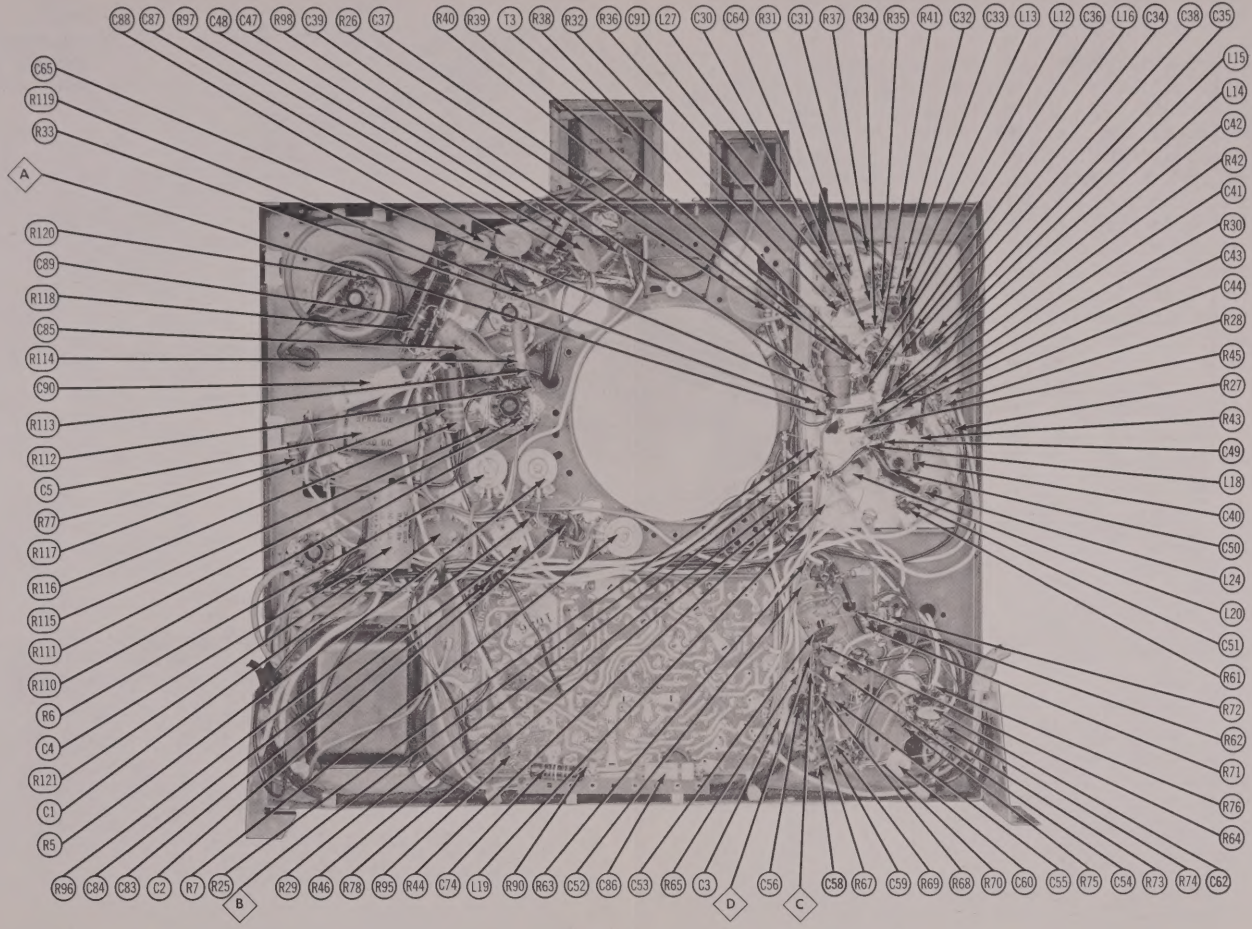
The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - Fuse (M2), V19

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V4, V5, V6, V8
No pic, no sound, has snow - V2, V3, (V1 UHF)
No pic, has sound, has raster - V7, V20
Has pic, no sound - V9, V10, V11, V12
Overloaded picture - V8

SYNC FAILURE
No vert. sync - V13, V7, V12
No horiz. sync - V13, V7, V12, Diode (M1)
No vert. or horiz. sync - V13, V7, V12

SWEEP FAILURE
No raster, has sound - M1, V15, V16, V17, V18, V20
No vertical deflection - V8, V14
Poor vert. linearity or foldover - V8, V14
Poor horiz. linearity or foldover - V15, V16, V17
Narrow picture - V15, V16, V17, V19
Vert. off freq. -V8, V14
Horiz. off freq. - M1, V15



CHASSIS BOTTOM VIEW

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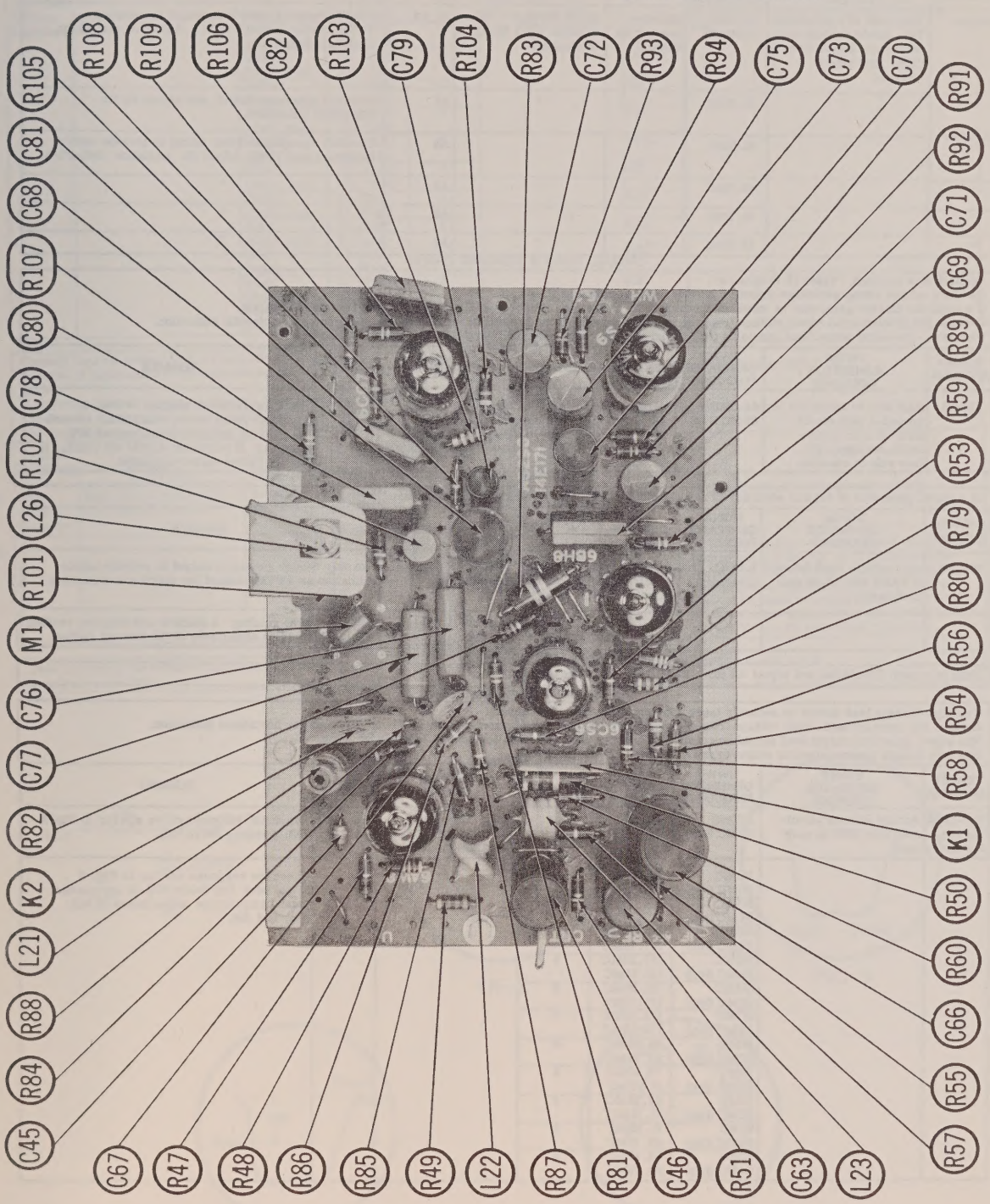


PRINTED BOARD

ADMIRAL
CHASSIS 20SZ4EF, PS

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.

VIDEO IF ALIGNMENT

Connect the negative lead of 4.5 volt bias supply to point (A). Positive to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over mixer-oscillator tube (V3). Low side to chassis.	45.3MC (Unmod)	Any non-interfering channel	DC probe thru 10K to point (B). Common to chassis.	A1, A2	Keep attenuating generator output to maintain VTVM reading below 3 volts. Adjust A1 and A2 for maximum deflection.
2.	"	"	41.25MC	"	"	A3	Increase generator output and adjust A3 for MINIMUM deflection.
3.	"	"	41.5MC	"	"	A4	Use only enough generator output to provide usable indication on VTVM. Adjust for maximum deflection.
4.	"	"	42.5MC	"	"	A5	"
5.	"	"	43.5MC	"	"	A6	"
6.	"	"	43.5MC	"	"	A6	"

OVERALL VIDEO IF RESPONSE CHECK

Connect bias as under "Video IF Alignment".
Use only enough sweep generator output to provide usable pattern on scope.
If a separate marker generator is used, couple it loosely to the high side of sweep generator output lead on tube shield.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Direct	High side to an ungrounded tube shield floating over mixer-oscillator tube (V3). Low side to chassis.	44.0MC (10MC Swp)	41.25MC 42.25MC 43.0MC 45.0MC 45.75MC	Any non-interfering channel	Vert. Amp. thru decoupling filter (Fig. 1) to point (B). Low side to chassis.		Check for response similar to Fig. 2. If unequal peaks occur, SLIGHTLY retouch A6. If valley between peaks exceed 20%, adjust A7. If response is still not similar to Fig. 2, repeat entire alignment.

SOUND IF ALIGNMENT

If a signal generator of crystal accuracy is not available, a local TV station signal may be used.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.01MFD	High side to pin 8 (plate) of 6AM8 (V6). Low side to chassis.	4.5MC (Unmod)	Any non-interfering channel	DC probe to point (C). Common to chassis.	A8, A9	Use only enough generator output to provide usable indication on VTVM. Adjust for maximum deflection.
9.	"	"	"	"	DC probe to point (D). Common to chassis.	A10	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

4.5MC TRAP ALIGNMENT

10. Tune in a local TV station and adjust A11 for MINIMUM 4.5MC beat in the picture.

VHF RF AND MIXER ALIGNMENT

The High Voltage lead should be securely taped and kept away from the chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide usable pattern on scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. Amp. thru 10K to point (E). Low side to chassis.	A12, A13, A14	Adjust for response curve similar to Fig. 3 with markers above 90%.
12.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response similar to Fig. 3. If markers fall below 70% on any channel, make compromise adjustments of A12, A13, and A14.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

ALIGNMENT INSTRUCTIONS (cont)

VHF OSCILLATOR ALIGNMENT

Connect bias as under "Video IF Alignment".
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the center of its range.
Use only enough sweep generator output to provide usable pattern on scope.
Set the fine tuning at the center of its range. The adjustments are accessible, one at a time, as the channel selector is rotated.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
13.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. thru 47K to point (B). Low side to chassis.	A15	Adjust to place sound marker in trap notch as in Fig. 4. Video marker should fall at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A16	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A17	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A18	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A19	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A20	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A21	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A22	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A23	
			69MC (10MC	67.25MC 71.75MC	4		A24	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A25	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A26	

UHF 44MC IF ALIGNMENT

Connect bias as under "VHF RF and Mixer Alignment".
Remove IF input cable from tuner output socket for step 14. Re insert IF input cable for step 15. Remove mixer crystal (M3) from holder.
If separate marker generator is used, couple loosely to the high side of sweep generator.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
14.	100Ω Carbon Resistor	High side to point (G). Low side to chassis.	43.5MC (12MC Swp)	41.25MC 45.75MC	UHF	Vert. Amp. thru 10K to point (E). Low side to chassis.	A27	Adjust to obtain curve similar to Fig. 5.
15.	"	"	"	"	"	Vert. Amp. thru decoupling filter (Fig. 1) to point (B). Low side to chassis.		Increase bias to -6 volts. Check for response curve similar to Fig. 4. If curve does not resemble Fig. 4 within tolerance make compromise adjustment of A2. If curve cannot be made to resemble Fig. 4, check to be sure all instructions have been followed. Check V1 and V2 and repeat alignment.

UHF TUNER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

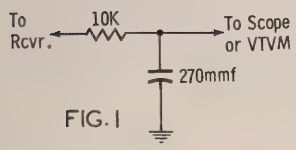


FIG. 1

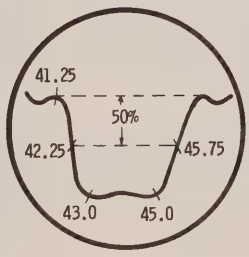


FIG. 2

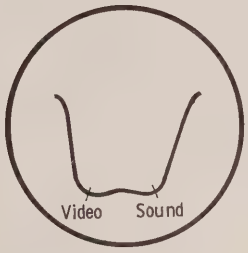


FIG. 3

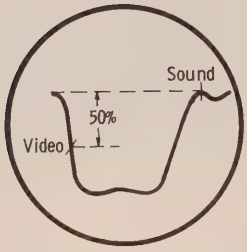


FIG. 4

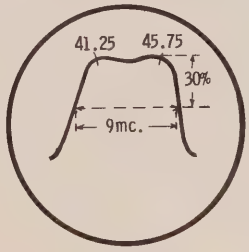
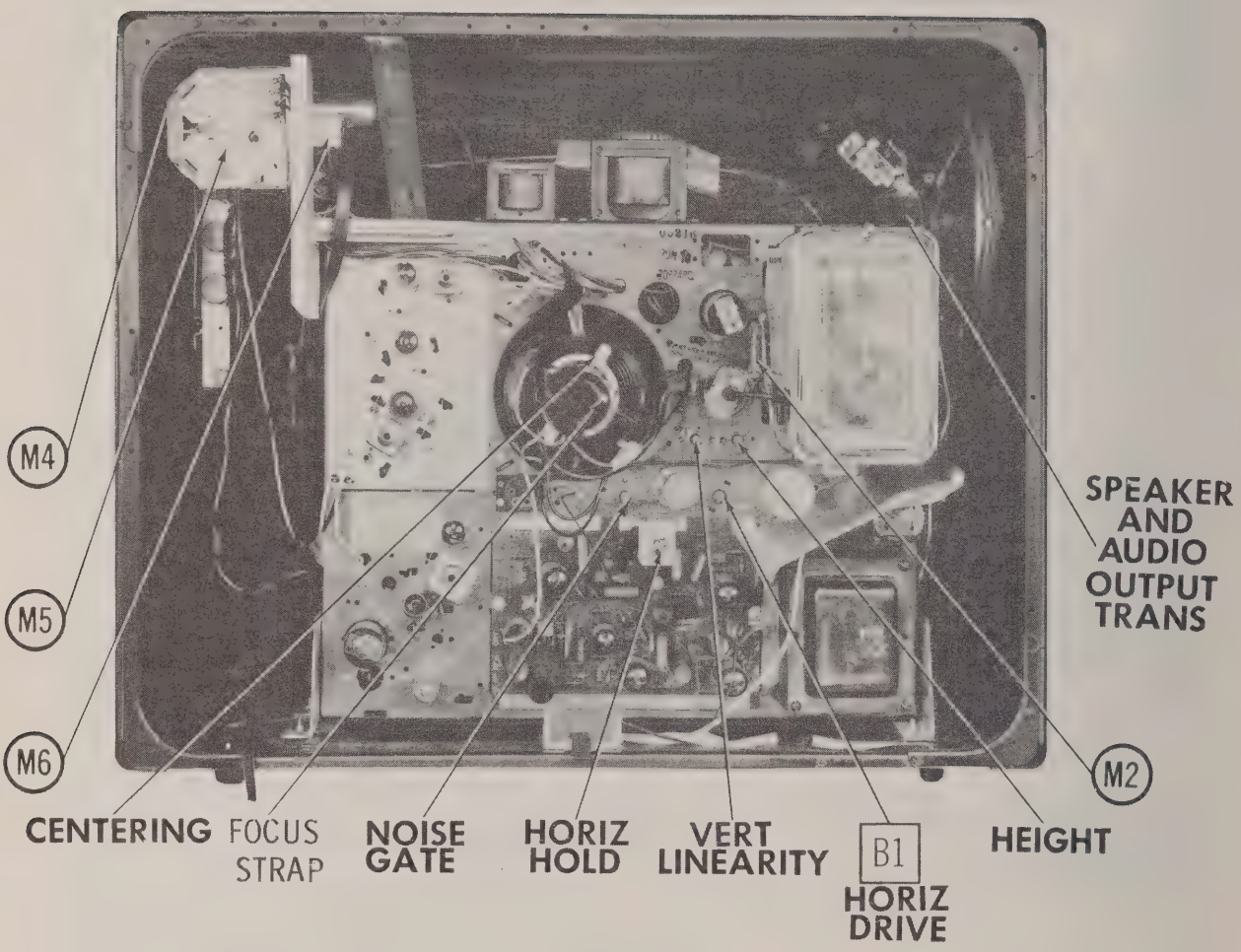


FIG. 5



CABINET—REAR VIEW

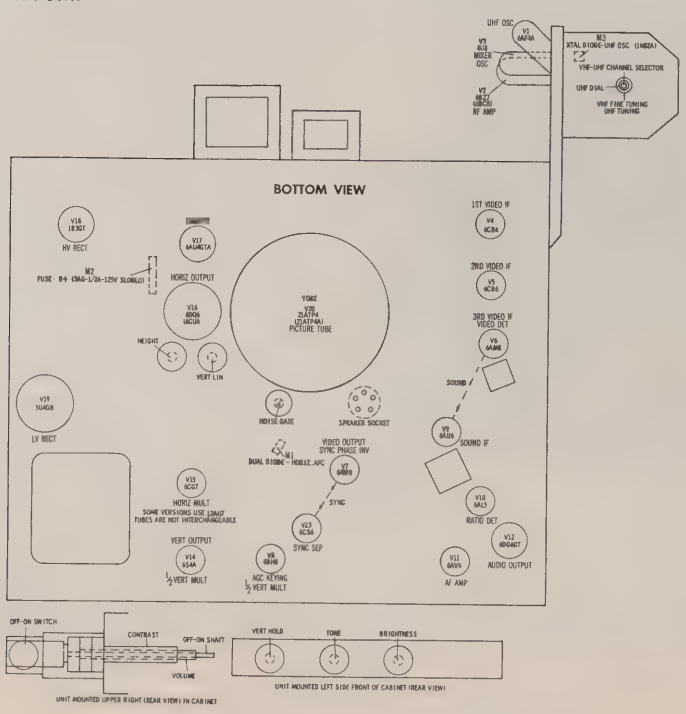
HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

1. Turn the set on and tune in a TV station, preferably with a test pattern.
2. Set the brightness and contrast controls for a normal picture.
3. Turn the horizontal hold clockwise until the picture loses sync. It may be necessary to switch off channel and back again for picture to lose sync.
4. Turn the horizontal hold slowly counter clockwise until the picture just falls into sync.
5. Turn to an unused channel. If a vertical white line appears near the center of the screen, slowly adjust the horizontal drive trimmer (B1) until white lines disappear.
6. If in step 5 the horizontal drive was adjusted, tune in a TV station and repeat steps 3 and 4. Check horizontal sync by switching off channel and back again.

RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6AF4A	■ *3800Ω	10K	.1Ω	0Ω	.1Ω	10K	■ *3800Ω		
V2	6BZ7	† 3000Ω	300K	INF	0Ω	.1Ω	INF	3Meg	0Ω	† 3000Ω
V3	6U8	■ 3800Ω	5Meg	† 100K	0Ω	.1Ω	† 9700Ω	0Ω	0Ω	10K
V4	6CB6	150K	62Ω	0Ω	.1Ω	† 5000Ω	† 5000Ω	0Ω		
V5	6CB6	150K	82Ω	.1Ω	0Ω	† 5000Ω	† 5000Ω	0Ω		
V6	6AM8	120Ω	.1Ω	32K	.1Ω	0Ω	† 11K	.1Ω	4500Ω	0Ω
V7	6AW8	3300Ω	1.4Meg	† 10K	.1Ω	0Ω	• 700Ω	4800Ω	■ 8400Ω	■ 4900Ω
V8	6BH8	• 280K	220K	• ‡2.5Meg	0Ω	.1Ω	■ 220Ω	■ 11K	† 55Ω	† 1.8Meg
V9	6AU6	470K	0Ω	0Ω	.1Ω	■ 1000Ω	■ 1000Ω	120Ω		
V10	6AL5	INF	INF	0Ω	.1Ω	10K	0Ω	10K		
V11	6AV6	4.7Meg	450Ω	0Ω	.1Ω	0Ω	0Ω	† 470K		
V12	6DG6GT	TP	0Ω	† 524Ω	† 274Ω	† 420K	TP	.1Ω	¶	
V13	6CS6	45K	0Ω	.1Ω	0Ω	■ 45K	■ 22K	1.8Meg		
V14	6S4A	NC	• 1500Ω	1.5Meg	0Ω	.1Ω	1.5Meg	NC	NC	‡9000Ω
V15	6CG7	† 5600Ω	550K	1500Ω	0Ω	.1Ω	† 82K	150K	1500Ω	0Ω
V16	6DQ6	NC	.1Ω	TP	13K	470K	TP	0Ω	10Ω	TOP CAP ‡16Ω
V17	6AU4GTA	NC	NC	¶	NC	† 54Ω	NC	.1Ω	0Ω	
V18	1B3GT		PINS	1 THRU 8	HAVE	INFINITE	RESISTANCE			TOP CAP ‡525Ω
V19	5U4GB	NC	60K	NC	24Ω	NC	23Ω	NC	60K	
V20	21ATP4	.1Ω	56K	Pin 6 9000Ω	Pin 10 9000Ω	Pin 11 ■ 190K	Pin 12 0Ω			

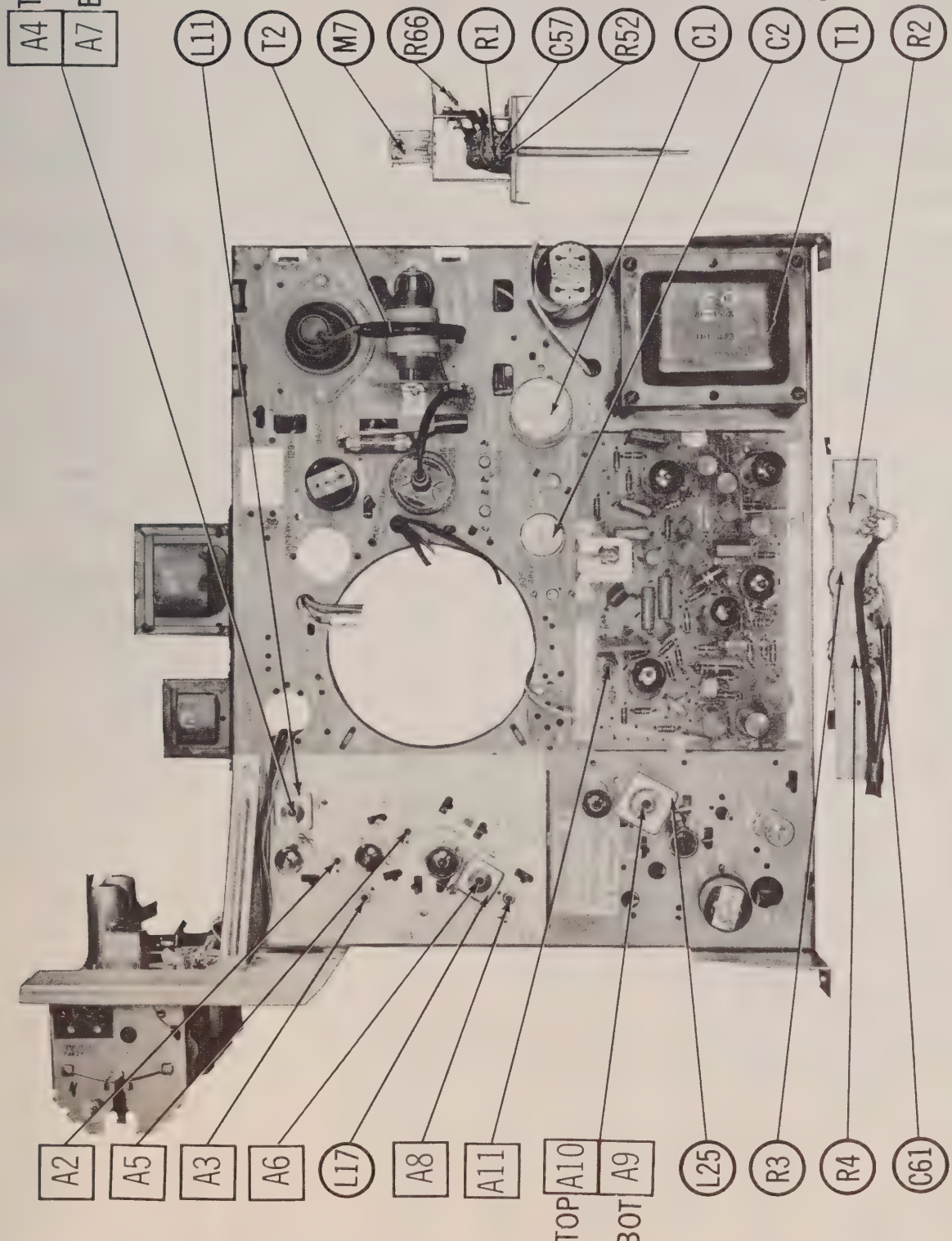
† MEASURED FROM PIN 8 OF V19.
• MEASURED IN "UHF" POSITION.
‡ MEASURED FROM PIN 3 OF V17.
■ MEASURED FROM 150V SOURCE.
■ THIS READING WILL VARY, CONTROL SET FOR NORMAL OPERATION.
¶ THIS READING CAN VARY GREATLY, (10K MINIMUM), DUE TO THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.
NC NO CONNECTION
TP TIE POINT



TUBE PLACEMENT CHART

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

ADMIRAL
CHASSIS 20SZ4EF, PS
CHASSIS TOP VIEW



PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No	USE	TYPE	NOTES
V1	UHF Osc.	6AF4A	
V2	RF Amplifier	6BZ7	Note 1
V3	Mixer Osc.	6U8	
V4	1st Video IF	6CB6	
V5	2nd Video IF	6CB6	
V6	3rd Video IF-Video Det.	6AM8	
V7	Video Output-Sync Phase Inverter	6AV6	
V8	AGC Keying-Vert. Mult.	6BH6	
V9	Sound IF	6AU6	

ITEM No	USE	TYPE	NOTES
V10	Ratio Det.	6AL5	
V11	AF Amp.	6AV6	
V12	Audio Output	6V6GT	
V13	Sync Sep.	6CS6	
V14	Vert. Mult.-Vert. Output	6U4A	
V15	Horiz. Mult.	6BQ7A	
V16	Horiz Output	6DQ6	Note 2
V17	Damper	6AL4GTA	Note 3
V18	HV Rectifier	1B3GT	
V19	LV Rectifier	5U4GB	

Note 1. Some versions use 6BC8 in this application.
Note 2. Some versions use 15AU7 in this application.
NOTE. These tubes are not interchangeable.
Note 3. Some versions use 6CU8 in this application.

PICTURE TUBE

ITEM No	REPLACEMENT DATA				NOTES
	ADMIRAL PART No.	CBS PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	
V20	21ATP4 or 21ATP4A	21ATP4	21ATP4A/PA	21ATP4A/PA ① 21ATP4 ① 21ATP4A ①	① Silver Screen "85" Aluminized

ELECTROLYTIC CAPACITORS

ITEM No	RATING CAP	RATING VOLT	REPLACEMENT DATA ADMIRAL PART No.	AEROVOX PART No.	CORNELL DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	●60	350	67DE5-105	AFH53-1-414-DO644	-BR2025	FP344, 2	TMD-89	T-180	TVL-3839, 2
B	●100	350				TC65	TD-20-250	MTD-4520	
C	●20	200							
C2A	●5	200	67DE5-109	AFH3-84-50	CO656	FP511, 8	TMT-178	T-080	TVL-3467
B	●60	200				TC2003		MT-4304	
C	20	50							
C3	4	50	67A4-9	PRS150V4	BBR-4-50	TC-30	TD-4-50	MT-1504	TVA-1403
C4	40	200	67A4-21	PRS250V40	BR4035	TC-58	TD-40-35	MT-3540	TVA-1511
C5	10	500	67A4-23	PRS500V10	BR1350	TC-33	TD-10-500	MT-5010	TVA-1902

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No	RATING CAP	RATING VOLT	REPLACEMENT DATA ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C8	3.6			NPO-S1 3. 3	TCZ-3R3	C10V33C	TCC-3. 3	Z7-3833	TTCCB-V33	
C7	200		94E75-120	S1 200		D6-201	TD-200	UC-882	36A-Y2	
C9	1000		94D64-121	KF-001		MFT-1000			503C-DX	
C10	1000		94D64-121	KF-001		MFT-1000			503C-DX	
C10	1500		94E75-118	B2PD-015		DD-152	BYA1CD15	ED-0015	DC5B15	5HK-D15
C11	3		94E75-119							
C12	3-12		94E75-148							
C13	1500		94E75-118	B2PD-015		DD-152	BYA1CD15	ED-0015	DC5B15	5HK-D15
C14	3		94D64-68	NPO-S1 3.		TCZ-3R3	C10V3C	TC1-3	Z7-553	
C15	800		94C37-90						5GA-T8	
C16	800		94C37-90						5GA-T8	
C17	.5-3		98A45-23			S3S-3		31S5-D	CT555A	
C18	47		94D64-68	B2PD-000047		D10Q47		ED-47	UC-5647	5GA-Q47
C19	800		94C37-90						5GA-T8	
C20	47		94E75-121							10%
C21	3-3		98A45-23			S3S-3		31S5-D	CT555A	
C22	10000		65D10-3	B2PD-01		DD-103	BYA6SE	ED-01	DC5L	5HK-S1
C23	1000		94D64-121	KF-001		MFT-1000			503C-DX	
C24	1500		94D64-89	B2PD-015		DD-152	BYA1CD15	ED-0015	DC5B15	5HK-D15
C25	10		94D64-91	N750-S1 10		C10Q10J	TCC-10		5YT-S41	STCC-Q
C26	5		94D64-90							N750
C27	800		94C37-90							N900
C28	1500		94E75-118	B2PD-015		DD-152	BYA1CD15	ED-0015	DC5B15	5HK-D15
C29	1500		94E75-118	B2PD-015		DD-152	BYA1CD15	ED-0015	DC5B15	5HK-D15
C30	82		94C6-114			TCZ-82	C10Q82C	TCC-82		NP0
C31	330		65B21-331		1469-00033		S3F33		M8-333	
C32	12		94C6-49		S1 12	D8-120	C10Q12	ED-12	UC-5412	5GA-Q12
C33	800		94C37-90		B2PD-008	DD-801	LIQT8	ED-800		5GA-T8
C34	1.8		65C6-101		NPO-S1 1. 8	TCZ-1R8	C10V18C	TCC-1. 8	Z7-5515	NP0
C35	1.8		65C6-01			TCZ-1R8	C10Q18C	TCC-1. 8		NP0
C36	6. 8		65C6-100		NPO-S1 6. 8	TCZ-6. 8	C10V68C	TCC-6. 8	Z7-5568	TTCCB-V68
C37	800		65D10-29		B2PD-008	DD-801	LIQT8	ED-800		5GA-T8
C38	800		65D10-29		B2PD-008	DD-801	LIQT8	ED-800		5GA-T8
C39	800		65D10-29		B2PD-008	DD-801	LIQT8	ED-800		5GA-T8
C40	5000		65D10-29		B2PD-005	DD-503	BYA5DE	ED-005	DC5S	5HK-D5
C41	5000		65D10-29		B2PD-005	DD-502	BYA5D5	ED-005	DC5S	5HK-D5
C42	5000		65D10-29		B2PD-005	DD-503	BYA5DE	ED-005	DC5S	5HK-D5
C43	800		65D10-29		B2PD-008	DD-801	LIQT8	ED-800		5GA-T8
C44	800		65D10-29		B2PD-008	DD-802	LIQT8	ED-800		5GA-T8
C45	6. 8		65B28-068		NPO-S1 6. 8	TCZ-6. 8	C10V68C	TCC-6. 8	Z7-5568	TTCCB-V68
C46	22	400	64B16-26		P88BN-0068	D4-562			B2SP-222	ACE6032
C47	6800	400	64B16-14						CU384DM4	ED-0068
C48	10000	1000	64A2-13						BYA6S1	
C49	6. 8		65B28-068		NPO-S1 6. 8	TCZ-6R8	C10V68C	TCC-6. 8	Z7-5568	TTCCB-V68
C50	10		65C6-44		NPO-S1 10	TCZ-10	C10Q1C	TCC-10	Z7-541	TTCC-Q41
C51	20		65C6-51		S1 20	D8-200	C10Q2J	ED-20	UC-543	5GA-Q2
C52	5000		65D10-5		B2PD-005	DD-503	BYA5DE	ED-005	DC5S	5HK-D5
C53	180		65D10-52							N030
C54	500				B2PD-0005	DD-501	LIQT5	ED-500	UC-535	5GA-T5
C55	470				1469-00047		SR5T47	ED-470	UC-5347	5GA-T47
C56	5000				B2PD-005	DD-502	BYA1CD5	ED-005	DC5S	5HK-D5
C57	.033	400			B2PD-03	DF-303	CU384S3		GEM-4133	47M-S33
C58	5000				B2PD-005	DD-502	BYA1CD5	ED-005	DC5S	5HK-D5
C59	140				1469-000032		S5N025		M8-422	
C60	10000				B2PD-01	DD-103	BYA6S1	ED-01	DC5L	5HK-S1
C61	2200				B2PD-0032	DD-322	BYA1CD32	ED-0032	DC5S	5GA-D32
C62	10000		65D10-3		B2PD-01	DD-103	BYA6S1	ED-01	DC5L	5HK-S1
C63	82	200	64B16-51				BCS1P33		ACE6033	5GA-P33
C64	800		65D10-29		B2PD-008	DD-801	LIQT8	ED-800		5GA-T8
C65	.47	400	64B16-49		P48BN-47		CU384P47		GEM-4047	47M-P47
C66	.47	200	64B16-49				CU384P47			47M-P47
C67	5000				B2PD-005	DD-502	BYA6D5	ED-005	DC5S	5HK-D5
C68	.82	400	64B16-51				BCS2P47		ACE6047	47M-P47
C69	2200		65B21-222		1464-0023		LRSD33	ED-0032		M5-322
C70	.033	600	64B16-03				BCS233			47M-S33
C71	.082	600	64B16-32				BCS8247		ACE6147	68K-S82
C72	.033	600	64B16-56				BCS333			68K-S33
C73	.047	600	64B16-5				BCS447		ACE6147	68K-S47

PARTS LIST AND DESCRIPTIONS

CAPACITORS (cont)

ITEM No	RATING CAP	RATING VOLT	REPLACEMENT DATA ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C74	.001	1600	64A2-28		P1668N-001			CUB16D1	19TM-D1	
C75	10000		65D10-3		B2PD-01	DD-103	BYA6S1	ED-01	DC5L	5HK-S1
C76	.001	400	64B2-1		B2PD-001	DD-102	CU384DI	ED-001	GEM-4131	47M-D1
C77	.001	400	64B2-1		B2PD-001	DD-102	CU384DI	ED-001	GEM-4131	47M-D1
C78	.0047	400	65D10-39				BCS247		ACE6347	68K-D47
C79	.015	200	64B16-58				BCS215			68K-S15
C80	3900		65B21-392		1464-0039		LRSD39		M8-339	10%
C81	390		65B21-391		1464-0039		LRST39		M8-339	10%
C82	.001	600	65B21-681		1469-00068		LRST68		M5-368	10%
C83	.0047	600			B2PD-0047	D6-472		CUB6D47	ED-0047	GEM-6347	67M-D47
C84	170-782				66A30-3						
C85	.047	600			64B4-9		B2PD-05		DF-503	CUB5S47		GEM-9	57M-S47
C86	.001	1600			64A2-31		B2PD-001			CUB1D1		GEM-1631	19TM-D1
C87	239	3000			65D10-69								N1500 5%
C88	.150	3000			65D10-65								N1500 5%
C89	.047	1000			64A2-30		B2PD-05		DF-503	CUB1S647		GEM-10147	10TM-S47
C90	.1	600			64B4-7		P48BN-1		DF-104	CUB4P1		GEM-601	67M-P1
C91	800				65D10-29		B2PD-0008		DD-801	LIQT8	ED-800		5GA-T8

Note 1: Some versions use a 500MMF ceramic capacitor in this application. (Part #65C6-4)
Note 2. Not used in versions below Rue II.

CONTROLS

ITEM No	RATING RESIST ance	RATING WATTS	REPLACEMENT DATA ADMIRAL PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1000Ω	½	76B68-3					Contrast
B	1Meg	½						Volume-Tap@ 100K
R2A	300K	½	78C13-65	B-46	A47-300K-S	QU1-138	U43	Vertical Hold
B	Shaft			Not Req.	KS8-3	Not Req.	Not Req.	
C	200K	½	78C13-65①	B-46	A47-300K-S	QU1-139	U43	Vertical Hold
C2A	3Meg	½	78C13-67	Not Req.	KS8-3	Not Req.	Not Req.	
B	3Meg	½		B-76	A47-32Meg-2	QU3-139	U56	Tone
C	Shaft			Not Req.	KS8-3	Not Req.	Not Req.	
R3A	2Meg	½	78C13-64 ①	B-76	A47-32Meg-2	QU3-139	U56	Tone
B	Shaft			Not Req.	KS8-3	Not Req.	Not Req.	
R4A	100K	½	78C13-53	B-40	A47-100K-S	QU1-138	U41	Brightness
B	Shaft			Not Req.	KS8-3	Not Req.	Not Req.	
C	100K	½	78C13-63 ①	B-40	A47-100K-S	QU1-139	U41	Brightness
	Shaft			Not Req.	KS8-3	Not Req.	Not Req.	
R5A	3000Ω	½	78C30-7	B-8	A47-3000-S	QU-113	U8	Vert. Lin.
B	Shaft			Not Req.	FK8-1	RQ	Not Req.	
R6A	2.5Meg	½	78C30-1	BK-83	A47-2.5Meg-S	QU1-139	S1-S83	Height
B	Shaft			Not Req.	FK8-1	RQ	Not Req.	
R7A	6Meg	½	78C30-28	B-87	A47-6Meg-S	QU1-141	TA54L	Noise Gate
B	Shaft			Not Req.	FK8-1	RQ	Not Req.	

① Alternate part number used when control is mounted at front of set.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA ADMIRAL PART No.	IRC PART No.	NOTES
R8	10K			BTS-10K	
R9	1000Ω			BTS-1000	
R10	100Ω			BTS-100	
R11	22K			BTS-22K	
R12	47K			BTS-47K	
R13	620K			BTS-620K	
R14	470K			BTS-470K	
R15	100K			BTS-100K	
R16	100K			BTS-100K	
R17	100K			BTS-100K	
R18	8200Ω			BTS-8200	
R19	1500Ω	1		BTA-1500	
R20	6800Ω			BTS-6800	
R21	27K			BTS-27K	
R22	3300Ω	1		BTA-3300	
R23	100K			BTS-100K	
R24	10K			BTS-10K	
R25	68000 5%		60B7-682		
R26	1000Ω	1		BTA-1000	
R27	1000Ω			BTS-470	
R28	215Meg				
R29	450K 5%		60B7-434		
R30	560K			BTS-560K	
R31	24K 5%			BTS-24K	
R32	100Ω			BTS-100	
R33	4.7Meg			BTS-4.7Meg	
R34	1000Ω			BTS-1000	
R35	68000 5%		60B7-682		
R36	1000Ω			BTS-1000	
R37	680 5%			BTS-68 5%	
R38	39K 5%				
R39	1000Ω			BTS-1000	
R40	4000Ω	?		BTS-4000	
R41	82Ω			BTS-82	
R42	22K			BTS-22K	
R43	100Ω			BTS-100	
R44	10K	2		BTS-10K	
R45	120Ω			BTS-120	
R46	470Ω			BTS-470	
R47	100Ω			BTS-100	
R48	47K			BTS-47K	
R49	820Ω			BTS-820	
R50	4700Ω	2		BTB-4700	
R51	180K			BTS-180K	
R52	470Ω			BTS-470	
R53	390K			BTS-390K	
R54	2.5Meg			BTS-2.5Meg	
R55	150K			BTS-150K	
R56	4.7Meg			BTS-4.7Meg	
R57	8.2Meg			BTS-8.2Meg	
R58	680K			BTS-680K	
R59	680Ω			BTS-680	
R60	15K			BTS-15K	
R61	470K			BTS-470K	
R62	100Ω			BTS-100	
R63	120Ω			BTS-120	
R64	390Ω			BTS-390	

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA ADMIRAL PART No.	IRC PART No.	NOTES
R65	47K			BTS-47K	
R66	22K			BTS-22K	
R67	10K			BTS-10K	
R68	10K			BTS-10K	
R69	6.7Meg			BTS-6.7Meg	
R70	470K			BTS-470K	
R71	470Ω			BTS-470	
R72	27K	1		BTA-27K	
R73	100Ω			BTS-100	
R74	6800 5%		60B7-834	BTS-6800 5%	
R75	1Meg 5%		60B7-105	BTS-1Meg 5%	
R76	3.3Meg			BTS-3.3Meg	
R77	220Ω	1		BTA-220	
R78	220Ω			BTS-220	
R79	470K			BTS-470K	
R80	1.8Meg			BTS-1.8Meg	
R81	130K			BTS-130K	
R82	68K			BTS-68K	
R83	22K	3		BTB-22K	
R84	4.7Meg			BTS-4.7Meg	
R85	2.2Meg			BTS-2.2Meg	
R86	6800			BTS-6800	
R87	3300Ω			BTS-3300	
R88	3300Ω			BTS-3300	
R89	220K			BTS-220K	
R90	100K			BTS-100K	
R91	2.2Meg			BTS-2.2Meg	
R92	15K			BTS-15K	
R93	150K			BTS-150K	
R94	1.5Meg			BTS-1.5Meg	
R95	220K			BTS-220K	
R96	820Ω			BTS-820	
R97	39K			BTS-39K	
R98	2700Ω			BTS-2700	
R99	560Ω				
R100	560Ω				
R101	100K 5%				
R102	100K 5%				
R103	470K				
R104	6.7Meg				
R105	5600Ω				
R106	150K				
R107	82K				
R108	1500Ω				
R109	5600Ω				
R110	100Ω				
R111	470K				
R112	100Ω			BTS-100	
R113	27K	3		BTB-27K	
R114	27K	3		BTB-27K	
R115	10Ω			BTS-10	
R116	18K	2		BTB-18K	
R117	18K	2		BTB-18K	
R118	18Ω	1		BTA-18	
R119	270Ω				
R120	4.7Ω 5%			BW½-4.7 5%	
R121	270K			BTS-270K	

TRANSFORMER (POWER)

ITEM No	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA ADMIRAL PART No	Halldorson PART No	Merit PART No	Stancor PART No	Thordarson PART No	Triad PART No
T1	117VAC	580VCT	5V	6.3V	80C35-9	P-9736 ①	P-9736 ②	P-3088 ③	P-8817 ④	18R80 ⑤	R-88C ⑥
	Reg.	@1.7A	@ 2.50A	@ 3A	@ 10.4A						

① Parallel and phase 6.3V filament windings; tape 13. 5VCT filament winding. Drill new mounting holes.
② Parallel and phase 6.3V filament windings.
③ Parallel and phase 6.3V filament windings; drill new mounting holes.
④ Parallel and phase 6.3V, 6A filament windings; tape 6. 5V, 1. 5A filament windings.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No	USE	REPLACEMENT DATA ADMIRAL PART No.	Halldorson PART No	Merit PART No	RCA TYPE No	Ram PART No	Stancor PART No	Thordarson PART No	Triad PART No
T2	Horiz. Output Trans.	76D65-4	P-8443*1	MVO-54*1		X129*1	A-8255*1	31LY-76*1	D-49*8
T3	Vert. Output Trans.	76D43-4	21B07 ①	A-2834 ②		P313	A-8431	36B96	A-119X
T4A	Yoke(90°Horiz&Sm	94D47-13 ③	21B07 ①	21B07 ①	213AL ③	19D7*18/43	DY-48A ③	T-10 ③	Y-41-B ③
B	Vert(36M3B)	94D47-13 ③	⑩	⑩	⑩	⑩	⑩	⑩	⑩
		94A31-13 ③							YCI ③
		94B21-3 ③							YCL ③
		19A112-3 ③							CLI ③

① Drill new mounting hole(s).
② Cut and tape yellow lead.
③ Includes resistors R99 and R100.
④ Alternate yoke part number.
⑤ Yoke rear cover and centering device.
⑥ Alternate rear cover and centering device.
⑦ Yoke clamp.
⑧ Use original horiz. damping network.
⑨ Loosen and rotate core clamp 180°, then connect same as original.
⑩ Use original rear cover and centering device.
* This part may be superseded by Parts Manufacturer's introduction of special unit for this application.

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	RCA Replacement Connections	Ram Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
5	4	5		5	5	5	5
6	3	4		4	4	4	6
7	2	2		2	2	2	1
8	1	1		1	1	1	2
Special Note ⑪	⑪	⑪	⑪	⑪	⑪	⑪	⑪

⑪ Filament winding requires 3 turns.

TRANSFORMER (AUDIO OUTPUT)

ITEM No	IMPEDANCE Pri.	IMPEDANCE Sec.	REPLACEMENT DATA ADMIRAL PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T5	2500Ω	6-8Ω tapped @ 3-4Ω	Part of asbr.	21D04 ①				22B88	① Drill one new mtg. hole.

SPEAKER

ITEM No	TYPE SIZE	TYPE FIELD	TYPE V C	TYPE IMP.	REPLACEMENT DATA ADMIRAL PART No.	QUAM PART No.	NOTES
SP1	6"	PM	3-4Ω		TBC16-8 ①		① Not used in all versions. Check number on original speaker. Some chassis may employ two speakers.

COILS (RF-IF)

ITEM No.	USE	ADMIRAL PART No.	NOTES
L1	Fil. Choke	94E78-116	
L2	Grid. Choke	94E78-117	
L3	UHF Coupling Coil	94E78-114	
L4	UHF Coupling Coil	94E78-115	
L5A	VHF Ant. Coils	94E78-52	Channel 2
B	VHF Ant. Coils	94E78-53	Channel 3
C	VHF Ant. Coils	94E78-54	Channel 4
D	VHF Ant. Coils	94E78-55	Channel 5
E	VHF Ant. Coils	94E78-56	Channel 6
F	VHF Ant. Coils	94E78-57	Channel 7
G	VHF Ant. Coils	94E78-58	Channel 8
H	VHF Ant. Coils	94E78-59	Channel 9
I	VHF Ant. Coils	94E78-60	Channel 10
J	VHF Ant. Coils	94E78-61	Channel 11
K	VHF Ant. Coils	94E78-62	Channel 12
L	VHF Ant. Coils	94E78-63	Channel 13
L6	UHF Ant. Coils	94E78-51	
L7A	VHF, RF, Mixer Grid, Osc. Coils	94E78-72	Channel 2
B	VHF, RF, Mixer Grid, Osc. Coils	94E78-73	Channel 3
C	VHF, RF, Mixer Grid, Osc. Coils	94E78-74	Channel 4

Note 1
Note 2

ITEM No.	USE	ADMIRAL PART No.	NOTES
L7D	VHF, RF, Mixer Grid, Osc. Coils	94E78-76	Channel 5
S	VHF, RF, Mixer Grid, Osc. Coils	94E78-75	Channel 6
T	VHF, RF, Mixer Grid, Osc. Coils	94E78-77	Channel 7
G	VHF, RF, Mixer Grid, Osc. Coils	94E78-78	Channel 8
H	VHF, RF, Mixer Grid, Osc. Coils	94E78-79	Channel 9
I	VHF, RF, Mixer Grid, Osc. Coils	94E78-80	Channel 10
J	VHF, RF, Mixer Grid, Osc. Coils	94E78-81	Channel 11
K	VHF, RF, Mixer Grid, Osc. Coils	94E78-82	Channel 12
L	VHF, RF, Mixer Grid, Osc. Coils	94E78-83	Channel 13
L8	UHF RF and Mixer Grid	94E78-84	
L9	Neut. Coil	94D64-104	
L10	Mixer Plate Coil	94D64-103	

ITEM No.	USE	REPLACEMENT DATA ADMIRAL PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L11	1st Video IF	72B153-1				Includes 12MMF Cap.
L12	Fil. Choke	72D11-36	17-4533	TV-130	6218	1. 9 Microhenries
L13	2nd Video IF					
L14	Fil. Choke	72B143-3	17-5004*	TV-138*	6234*	1. 9 Microhenries
L15	41. 25MC Trap	72D11-37	32-1045		6225	
L16	3rd Video IF	72D11-38	17-4523	TV-150	6219	
L17	4th Video IF	72B143-3	17-5004*	TV-138*	6234*	
L18	RF Choke	72A34-1	18-1004		4610	6.4 Microhenries
L19	Series Peaking Coil	72B5-15	18-1004	TV-1364	6180A	194 inches of Wire Wound on 470Ω resistor.
L20	Shunt Peaking Coil	72B5-7	19-3500		6174	500 Microhenries

ADMIRAL
CHASSIS 20S24EF, PS

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (cont)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		ADMIRAL PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L21	4.5MC Trap	72C132-1				
L22	Series Peaking Coil	73B5-14	19-3250■	TV-185■	6181■	254 Microhenries; Wound on 18K resistor.
L23	Shunt Peaking Coil	73A11-1			6156♦	790 Microhenries; Wound on 10K resistor.
L24	Sound IF	72C132-1				
L25	Ratio Det.	72C68-2	17-1033	TV-110	1498	

* Use adaptor plate.
▲ Parallel with 4700Ω resistor.
■ Parallel with 18K resistor.
♦ Parallel with 10K resistor.

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES.		REPLACEMENT DATA							NOTES
	PRI.	SEC.	ADMIRAL PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	RCA TYPE No.	Ram PART No.	Thordarson PART No.	
L26	53Ω		94C17-4		TV-164					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	ADMIRAL PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L27	.250A	54Ω	1.3HY	74B18-15 ①	C5037 ②	C-2998 ②	C-2326②	26C44②	C-24X

① Alternate part #74B18-13.
② Drill one new mtg. hole.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	ADMIRAL PART No.	REPLACEMENT DATA	
K1	Sync Coupling	150MMF, 10000MMF, 270K	63C9-3	Centralab Sprague	PC-184 PB-1
K2	Vert. Intergrator	2000MMF, 5000MMF, 5000MMF, 22K, 8200Ω, 8200Ω	63C9-1	Aerovox Centralab Cornell Dubilier Erie Sprague	PA-110 PC-100 115TM1 1405-01 V-1

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA						
	CURRENT (Measured)	ADMIRAL PART No.	FEDERAL PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL PART No.	MALLORY PART No.	RADIO RECEPTOR PART No.	SARKES TARZIAN PART No.
M1		93A5-2 ① ②	1215 ① ③		1T1 ① ③			

① Selenium type, horiz. phase det.
② Used in chassis stamped run 10-run 13; chassis stamped run 14 and higher use 6AL5 tube.
③ 2 required.

FUSES

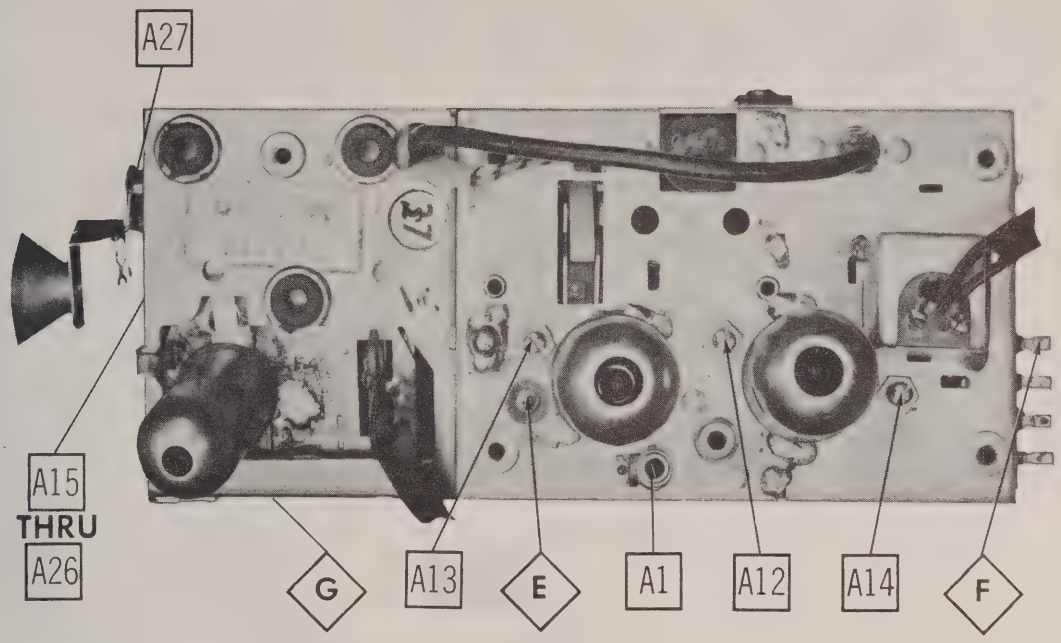
ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			ADMIRAL PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG	½A 125V S/B	84A1-33	84A5-4	313.500 (3AG-½A-S/B)	357001	MDL ½	4405

CRYSTAL DIODES

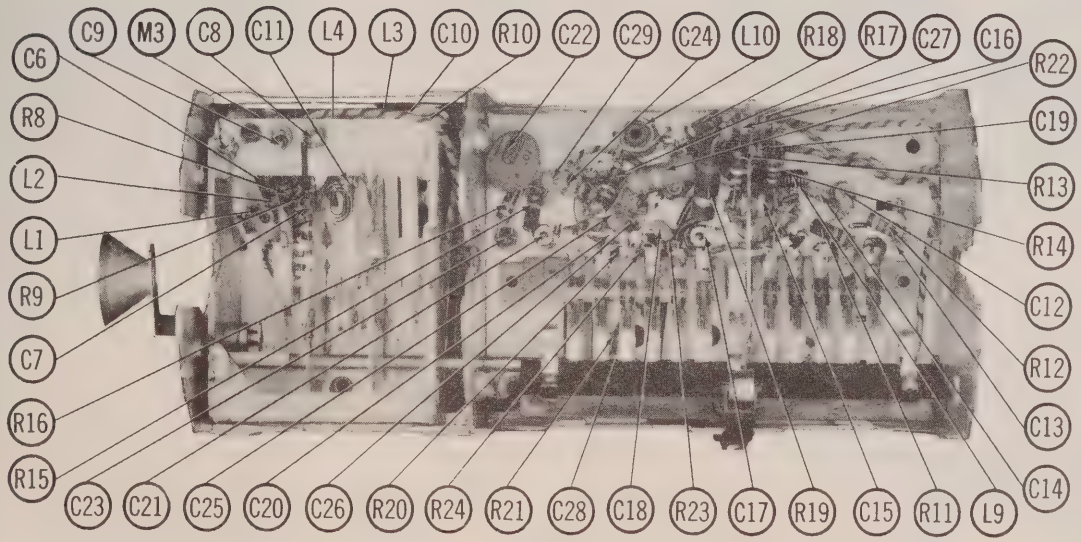
ITEM No.	ORIG. TYPE	REPLACEMENT DATA		NOTES
		ADMIRAL PART No.	SYLVANIA PART No.	
M3	1N82A		1N82A	UHF Mixer (Clip In)

MISCELLANEOUS

ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
M4	Dial Light	81A1-12	Type #51
M5	Tuner	94E75-19	UHF/VHF
M6	Ant. Filter	94D64-84	Complete assy., Includes coils and caps.
M7	Switch	77A58-1	On-Off
M8	Centering Device	94A121-1	Includes yoke cover.
	Centering Device	94B121-1	Includes yoke cover - alternate part.
M9	Ion Trap	94A15-4	
	Yoke Clamp	19A112-3	
	Printed Board	A5298	Used with 6CG7 Horiz. Osc.
	Printed Board	A4868-2	Used with 12AU7 Horiz. Osc.
	Focus Jumper	18A134	



RF TUNER-TOP VIEW



RF TUNER-BOTTOM VIEW

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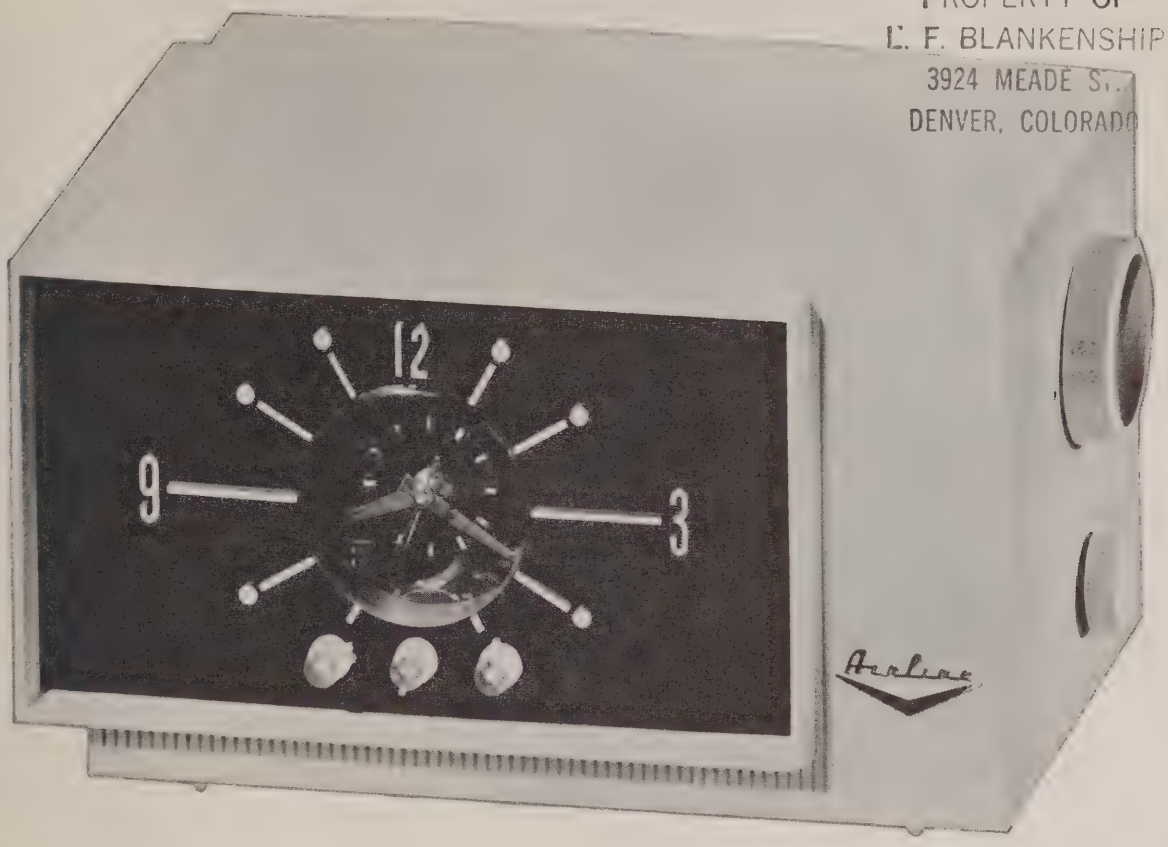
DENVER, COLORADO

AIRLINE MODELS
GSL-1650A, GSL-1651A



AIRLINE MODELS
GSL-1650A, GSL-1651A

TRADE NAME	Airline Models GRX-1650A, GRX-1651A, GSL-1650A, GSL-1651A
SUPPLIER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Ill.
TYPE SET	AC Operated AM Receiver With Electric Clock
TUBES (Five)	Types 12BE6 Converter, 12BA6 IF Amplifier, 12AV6 Det.-AVC-AF Amp., 50C5 Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycles — RATING .3 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535KC-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to antenna stator lug on tuning gang. Low side to B-.	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001 MFD to reduce hum modulation.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1400KC	Tune to 1400KC signal.	"	A6	"

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PARTS LIST AND DESCRIPTIONS

Airline
Model GSL-1650A

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Converter	12BE6	
V2	IF Amplifier	12BA6	
V3	Det. -AVC-AF Amplifier	12AV6	

ITEM No.	USE	TYPE	NOTES
V4	Output	50C5	
V5	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	AIRLINE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	50	150	R-1781	PRS150V3050	BBRD5315	TCD497	TDLD-8	FMD-301	TVA-2450
B	30	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							
	CAP.	VOLT	AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	.047	200		BPD-05	DF-503	CUB2S47		GEM-4147	2TM-S47	
C3	.047	200		BPD-05	DF-503	CUB2S47		GEM-4147	2TM-S47	
C4	.047	200		BPD-05	DF-503	CUB2S47		GEM-4147	2TM-S47	
C5	10000		N-9062	BPD-01	DD-103	BYA6S1	GP-10000	DC511	5HK-S1	
C6	10000		N-9062	BPD-01	DD-103	BYA6S1	GP-10000	DC511	5HK-S1	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	AIRLINE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	1Meg	½	R-1847	AB-744 *	A47-1Meg-Z*	Q13-137*	U53 *	Volume, 47K Stop
B	Shaft			AK-4	KSS-3	Not Req.	Not Req.	

* Connect 47K Resistor In Series With Right Hand Terminal Viewed From Front Of Control, Terminals Down.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

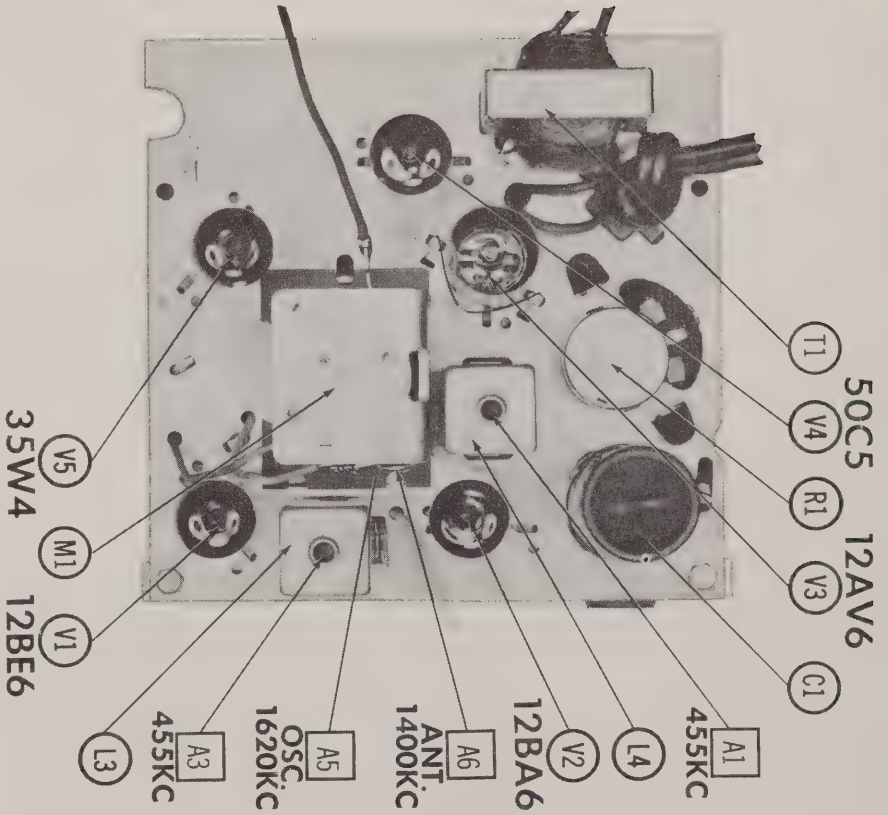
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	AIRLINE PART No.	IRC PART No.	
R2	22K			BTS-22K	
R3	100Ω			BTS-100	
R4	1Meg			BTS-1Meg	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	AIRLINE PART No.	IRC PART No.	
R5	180Ω			BTS-180	
R6	1200Ω	1		BTA-1200	
R7	22Ω			BTS-22	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	AIRLINE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2700Ω	3-4Ω	R-1841	Z1101 ①	A-3025 ①	A-3332 ①	26S58 ①	S-12X ①	① Bend Mounting Feet Down

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	AIRLINE PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	R-1478	4A07	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		AIRLINE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Loop	R-2018				Includes cabinet back
L2	Osc. Coil	R-1777				197 Microhenries
L3	Input IF	R-1234				Alternate Part No. R-1237
L4	Output IF	R-1234				Alternate Part No. R-1237

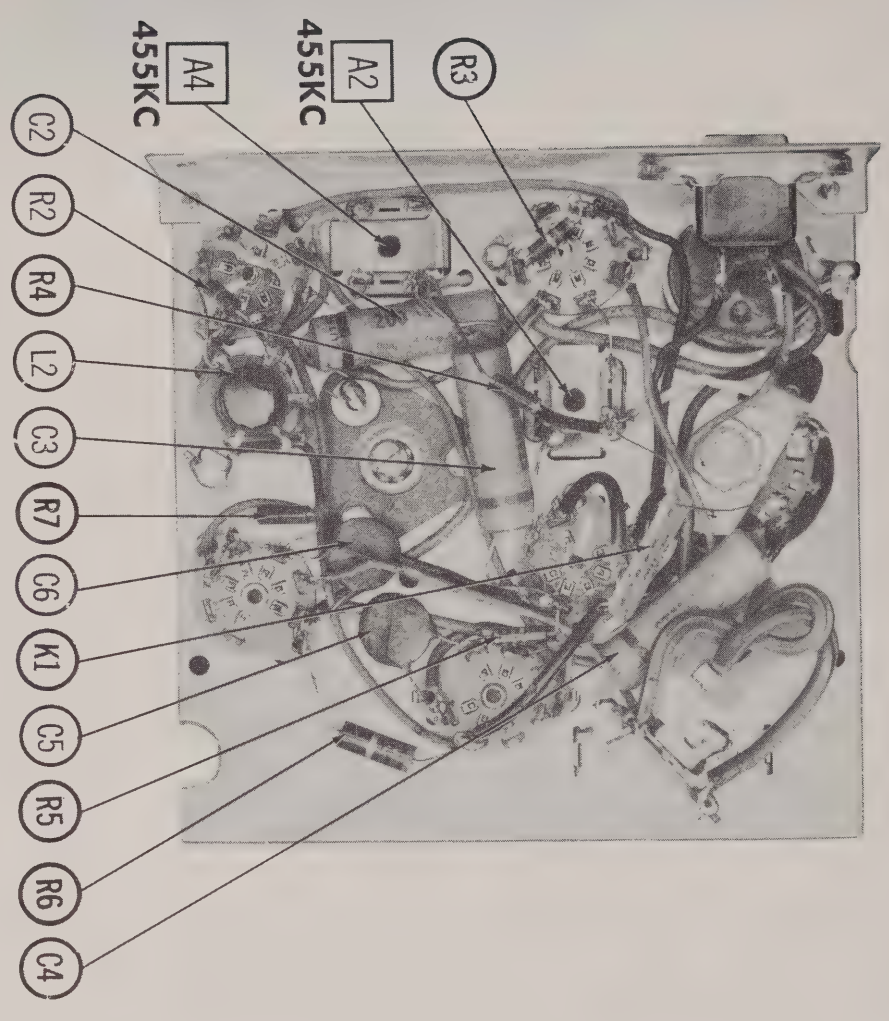
COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	AIRLINE PART No.	REPLACEMENT DATA
K1	Det.-Audio Net	2000MMF, 5000MMF, 220MMF, 250MMF, 6.8Meg, 470K, 470K	R-1487	Aerovox PA113-1 Centralab PC-150 Cornell-Dubilier 116TM1 Erie 1408-01 Sprague DT-5

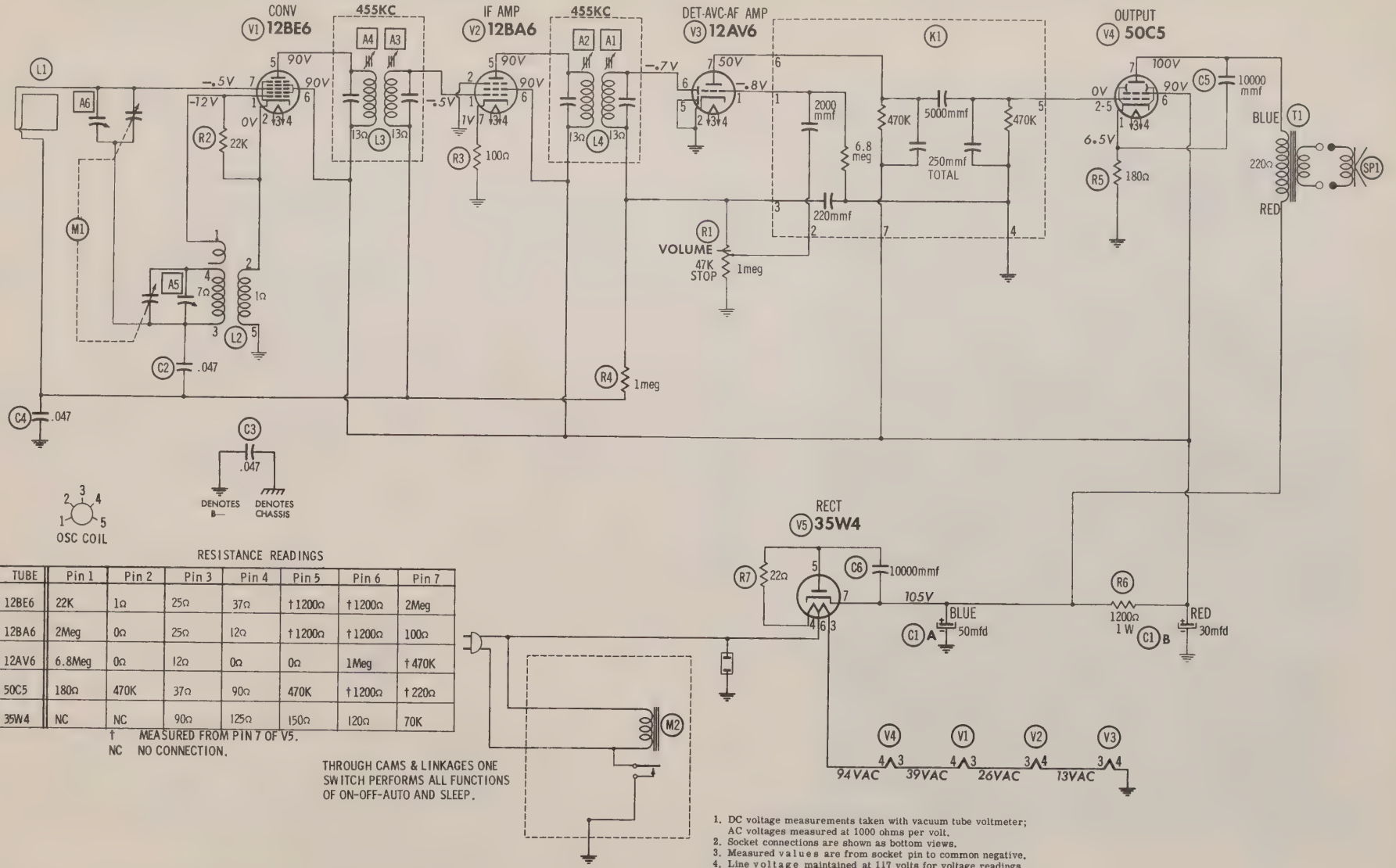
MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M1	Tuning Cap.	R-1779	2 Gang (15-250MMF, 27-125MMF)
M2	Clock	R-2012	
	Crystal	R-1860	Clock
	Knob	N-9784	Clock, Clear
	Knob	R-2022	Volume, Model GSL-1650A
	Knob	R-1879	Volume, Model GSL-1651A
	Knob	R-2024	Tuning, Model GSL-1650A
	Knob	R-2025	Tuning, Model GSL-1651A
	Cabinet	#562	Eggshell & Black, Model GSL-1650A
	Cabinet	#563	Pink & Black, Model GSL-1651A

CHASSIS—BOTTOM VIEW



Airline
Model GSL-1650A



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	1Ω	25Ω	37Ω	†1200Ω	†1200Ω	2Meg
V2	12BA6	2Meg	0Ω	25Ω	12Ω	†1200Ω	†1200Ω	100Ω
V3	12AV6	6.8Meg	0Ω	12Ω	0Ω	0Ω	1Meg	†470K
V4	50C5	180Ω	470K	37Ω	90Ω	470K	†1200Ω	†220Ω
V5	35W4	NC	NC	90Ω	125Ω	150Ω	120Ω	70K

† MEASURED FROM PIN 7 OF V5.
NC NO CONNECTION.

THROUGH CAMS & LINKAGES ONE SWITCH PERFORMS ALL FUNCTIONS OF ON-OFF-AUTO AND SLEEP.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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PHOTOFACT* Folder
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AIRLINE MODELS
WG-4026A, B, WG-4027A, B, WG-5038A, B, WG-5039A, B

PROPERTY OF
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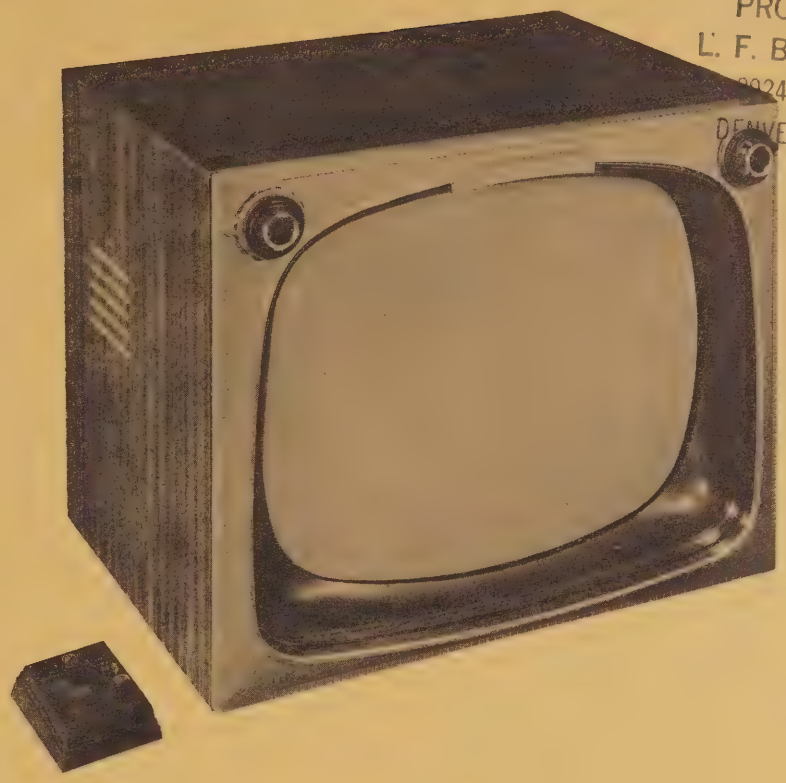

AIRLINE MODELS
WG-4026A, B, WG-4027A, B,
WG-5038A, B, WG-5039A, B

AIRLINE MODEL WG-4026B

TRADE NAME	Airline Models WG-4026A, B, WG-4027A, B, WG-5038A, B
SUPPLIER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Illinois
TYPE SET	Television Receiver
TUBES	Sixteen
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING 160 Watts, 1.35 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

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AIRLINE MODELS
WG-4026A, B, WG-4027A, B, WG-5038A, B, WG-5039A, B

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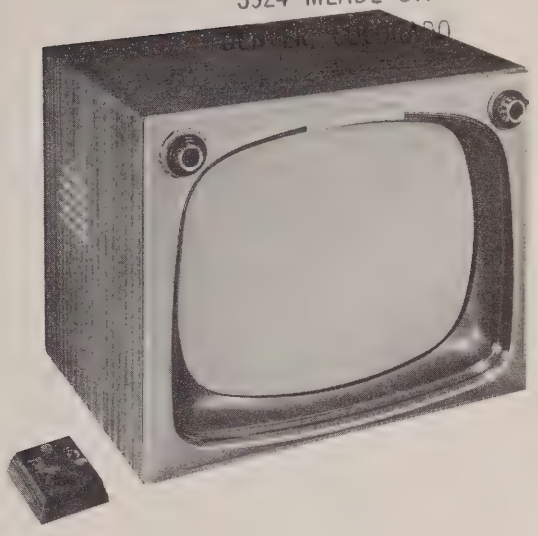
3924 MEADE ST.

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 4 wood screws, 1 metal screw and the rear cover.
2. Remove 2 speaker leads.
3. Loosen 2 wood screws and remove the antenna terminal board.
4. Remove 2 wood screws holding remote control switch.
5. Remove 2 metal screws holding chassis rails to brackets at the bottom of the cabinet. (In replacing chassis, replace these screws first.)
6. Remove 2 metal screws holding chassis rails at the top.
7. Remove the chassis, picture tube, etc., out the front by pulling at the bottom of the mask assembly until able to remove by handling chassis rails.
8. Remove 2 speaker nuts and the speaker.



CAUTION NOTE

ONE SIDE OF AC LINE CONNECTED TO CHASSIS

Care should be exercised when connecting test equipment or physcially contacting chassis.

MODELS

WG-4026A, B, WG-4027A, B, WG-5038A, B

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF oscillator is possible by removing the channel selector and fine tuning knobs. Set the fine tuning at the center of its range. The adjustments are accessible, one at a time, as the channel selector is rotated. Adjust for best picture and sound.

PICTURE TUBE SAFETY GLASS CLEANING

1. Remove name plate by prying off.
2. Remove 2 metal screws holding safety glass clamp.
3. Remove safety glass.

FOCUS

Adjust the Ion trap for the best focus consistent with maximum brightness.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Tune in a picture and turn the horizontal hold control fully clockwise. Adjust horizontal frequency slug (B1) until picture is just about to tear out of sync. Return horiz. hold control to center of its range. (For location see tube placement chart.)

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate audio detector buzz, adjust the buzz control for MINIMUM buzz and maximum sound. (For location see tube placement chart.)

FUSES

An overload circuit breaker is used for LV power supply protection. (For location see tube placement chart.)

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube. Rotate the two rings around the neck of the tube until the picture is properly centered.

AIRLINE MODELS
WG-4026A, B, WG-4027A, B,
WG-5038A, B, WG-5039A, B

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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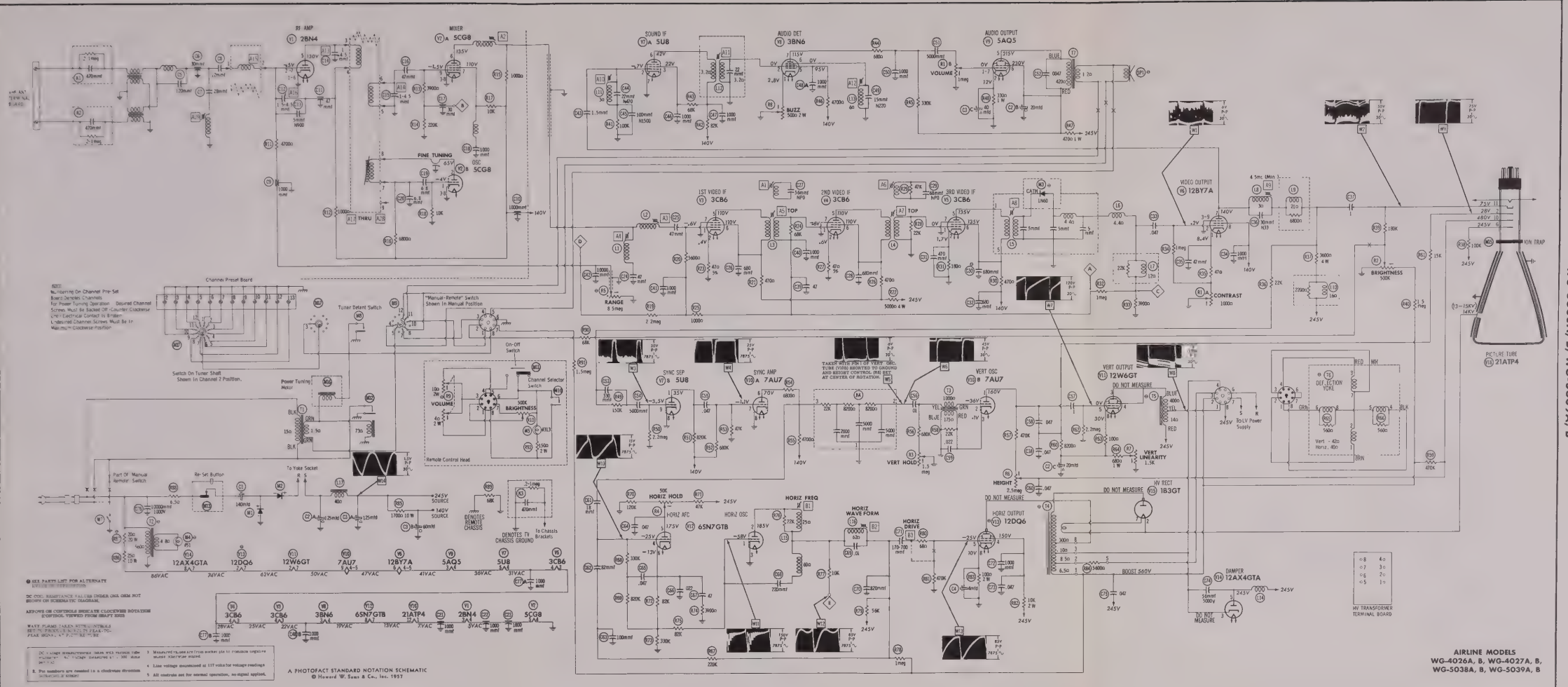
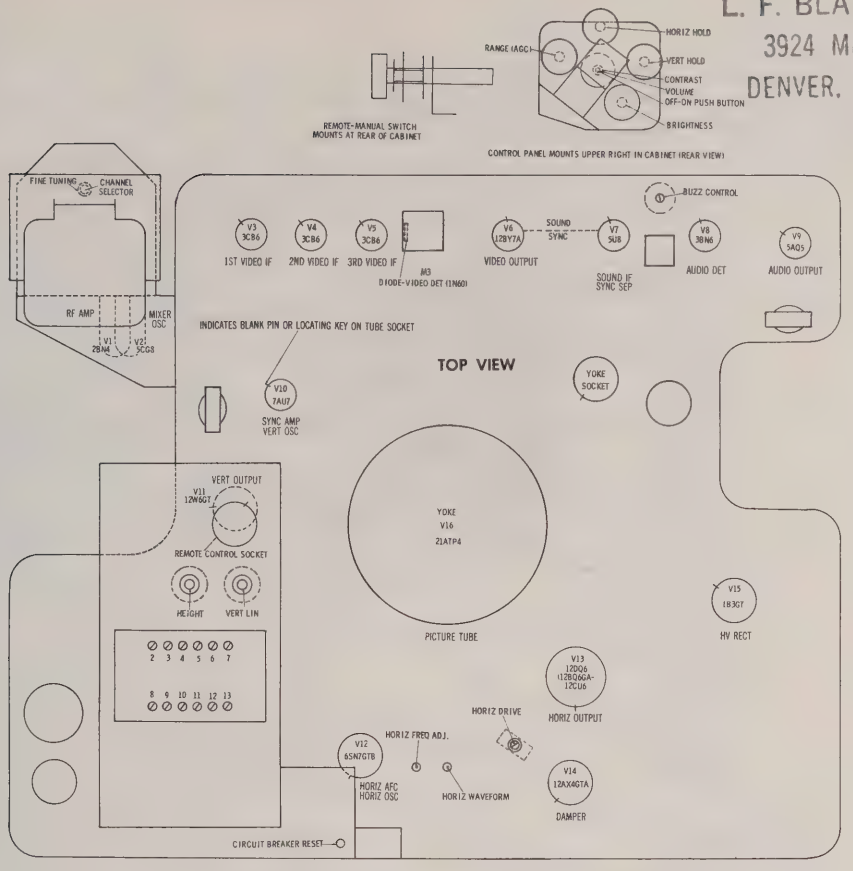


AIRLINE MODELS WG-4026A, B, WG-4027A, B, WG-5038A, B, WG-5039A, B

TUBE PLACEMENT CHART

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

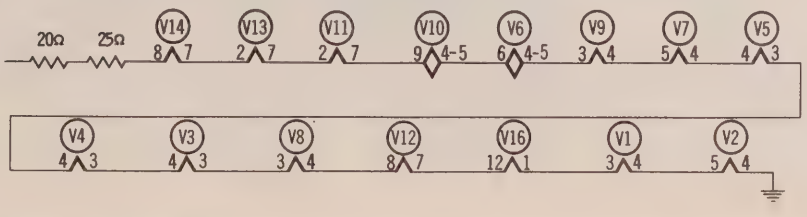
POWER SUPPLY FAILURE
No raster, no sound - **Overload (M13), Rectifier (M1, M2)**

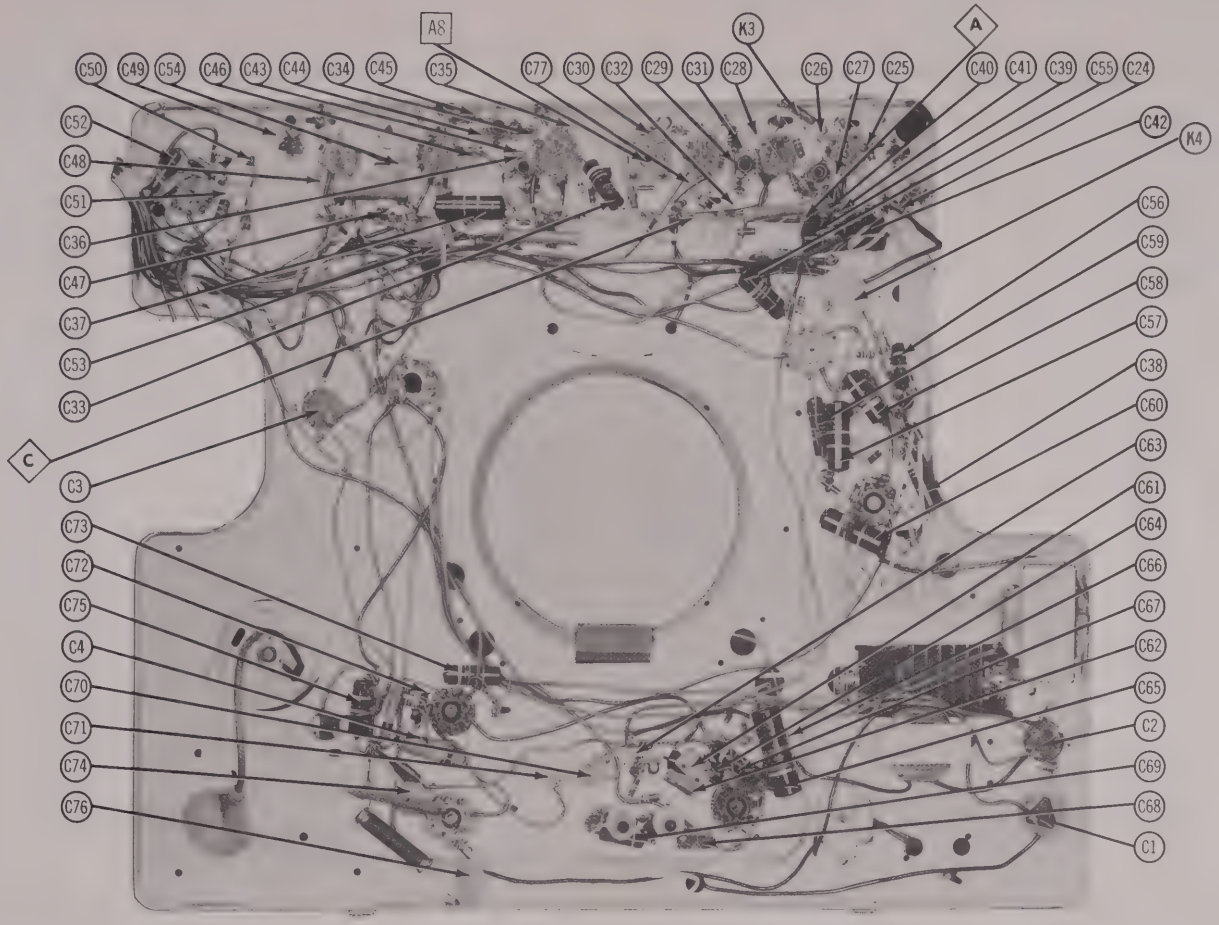
LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - **V3, V4, V5, Diode (M3), V6**
No pic, no sound, has snow - **V1, V2, V3**
No pic, has sound, has raster - **V6, V16**
Has pic, no sound - **V7, V8, V9**

SYNC FAILURE
No vert. sync - **V7, V10**
No horiz. sync - **V7, V10, V12**
No vert. or horiz. sync - **V7, V10**

SWEEP FAILURE
No raster, has sound - **V12, V13, V14, V15, V16**
No vertical deflection - **V10, V11**
Poor vert. linearity or foldover - **V10, V11**
Poor horiz. linearity or foldover - **V12, V13, V14**
Narrow picture - **V12, V13, V14, M1, M2**
Vert. off freq. - **V10**
Horiz. off freq. - **V12**

This receiver employs tubes used in a series filament network, an open filament in any tube in the series will cause the set to be inoperative. (See circuit below.)





CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT.

VIDEO IF ALIGNMENT

Connect the negative lead of a 1.5 volt bias supply to point Ⓐ. Positive to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	1000MMF ceramic capacitor	High side to point Ⓑ. (Use ungrounded tube shield on UHF receivers) Low side to chassis.	44.0MC (10MC Swp)	47.25MC	Any non-interfering channel.	Vert. amp. thru detector (Fig. 1) to pin 5 (plate) of 3CB6 (V3). Low side to chassis.	A1	Adjust to place marker in trap notch as in Fig. 2.
2.	"	"	"	41.25MC 45.75MC 47.25MC	"	"	A2, A3, A4	Adjust for response curve similar to Fig. 2. A2 and A3 control the shape of the top of the curve while A4 positions the 41.25MC marker. The adjustment of A4 must be correct or the sound rejection will not be correct. If the 45.75MC marker is not exactly on the peak the 44.5MC marker will be incorrectly positioned in later steps.
3.	"	"	"	42.8MC	"	Vert. amp. thru 47K to point Ⓒ. Low side to chassis.	A5	Increase bias at point Ⓐ to -4.5 volts. Connect a VTVM (DC probe) to point Ⓒ. Common to chassis. Adjust sweep output to provide a reading of 2 volts DC on VTVM. Adjust A5 for maximum gain at 42.8MC.
4.	"	"	"	41.25MC	"	"	A6	Adjust for MINIMUM amplitude at 41.25MC.
5.	"	"	"	45.3MC	"	"	A7	Adjust for maximum gain at 45.3MC.
6.	"	"	"	44.0MC	"	"	A8	Adjust for maximum gain at 44.0MC.
7.	"	"	"	41.25MC 42.4MC 42.8MC 44.0MC 44.5MC 45.3MC 45.75MC 47.25MC	"	"		If necessary, retouch A5 thru A8 for response curve similar to Fig. 3. A8 adjusts symmetry of curve top. A7 controls the position of the 45.75MC marker and A5 controls position of the 42.4MC marker. DO NOT RETOUCH A2 OR A3. THESE MUST BE ADJUSTED AS IN STEP 2.

4.5MC TRAP ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.01MFD	High side to pin 2 (grid) of 12BY7A video amp. (V6). Low side to chassis.	4.5MC (unmod)	Any non-interfering channel.	DC probe to pin 11 (cathode) of picture tube. Low side to chassis.	A9	Adjust for MINIMUM deflection.

This adjustment may also be made by observing a picture from a station and adjusting A9 for MINIMUM 4.5MC beat (grainy appearance) in picture.

SOUND IF ALIGNMENT

1. Tune in a TV station and reduce the signal strength at the antenna terminals by using an attenuator or similar device until a hiss is heard in the sound similar to super regeneration.
2. Adjust A10, A11, A12 and buzz control (R8) for maximum undistorted sound and MINIMUM buzz.
3. If the "hiss" disappears during step 2, reduce the signal farther until "hiss" returns.

RF AND MIXER ALIGNMENT

Connect the negative lead of 2.5 volts bias supply thru 10K to point Ⓓ. Positive to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep gener ator output to provide usable pattern on scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	195MC (10MC Swp)	193.25MC 197.75MC	10	Vert. amp. thru 10K to point Ⓑ. Low side to chassis.	A13, A14, A15	Adjust for response curve similar to Fig. 4 with markers above 90%. A15 is adjusted by expanding or compressing coil turns. Adjust A15 for maximum amplitude between markers. If necessary, retouch A13 and A14 for symmetrical response.
10.	"	"	"	"	"	Vert. amp. thru detector (Fig. 1) to pin 5 (plate) of 3CB6 (V3). Low side to chassis.	A16	Adjust for MINIMUM amplitude of response curve.
11.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. amp. thru 10K to point Ⓑ. Low side to chassis.		Adjust RF strip coil on each channel for maximum response on each channel. If necessary, make compromise adjustments of A13 and A14 for symmetrical response.
			207MC (10MC Swp)	205.25MC 209.75MC	12			
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

ALIGNMENT INSTRUCTIONS (cont)

OSCILLATOR ALIGNMENT

Connect the negative lead of a 4.5 volt bias supply to point (A). Positive to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide usable pattern on scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. amp thru 47K to point (C). Low side to chassis.	A17	Adjust to place sound marker in trap notch as in Fig. 5. Video marker should fall at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A18	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A19	
			195MC (10MC Swp)	193.25MC 203.75MC	10		A20	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A21	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A22	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A23	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A24	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A25	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A26	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A27	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A28	

13. If interference is noted on any channel, adjust A29 for MINIMUM interference (beat pattern) while observing picture.

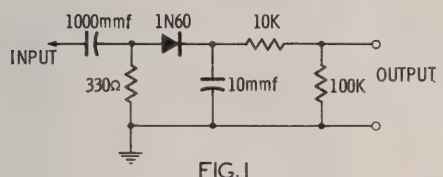


FIG. 1

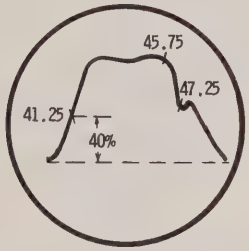


FIG. 2

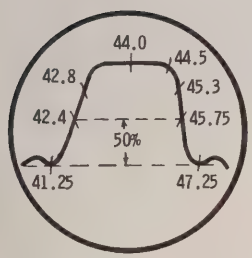


FIG. 3

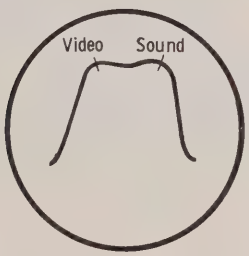


FIG. 4

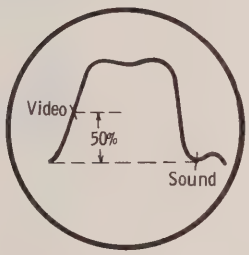
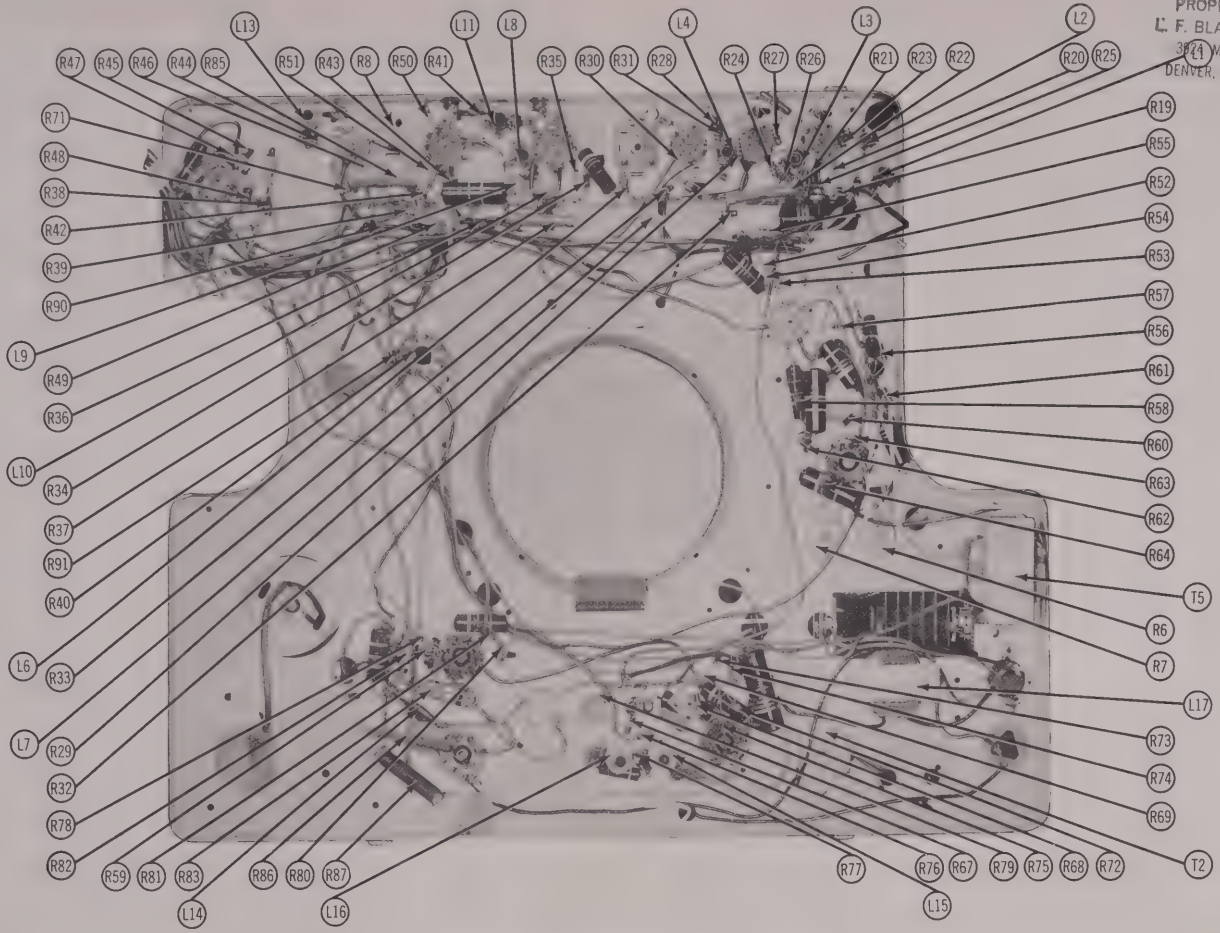


FIG. 5

PROPERTY OF
L. F. BLANKENSHIP
3824 MEADE ST.
DENVER, COLORADO



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

RESISTANCE MEASUREMENTS

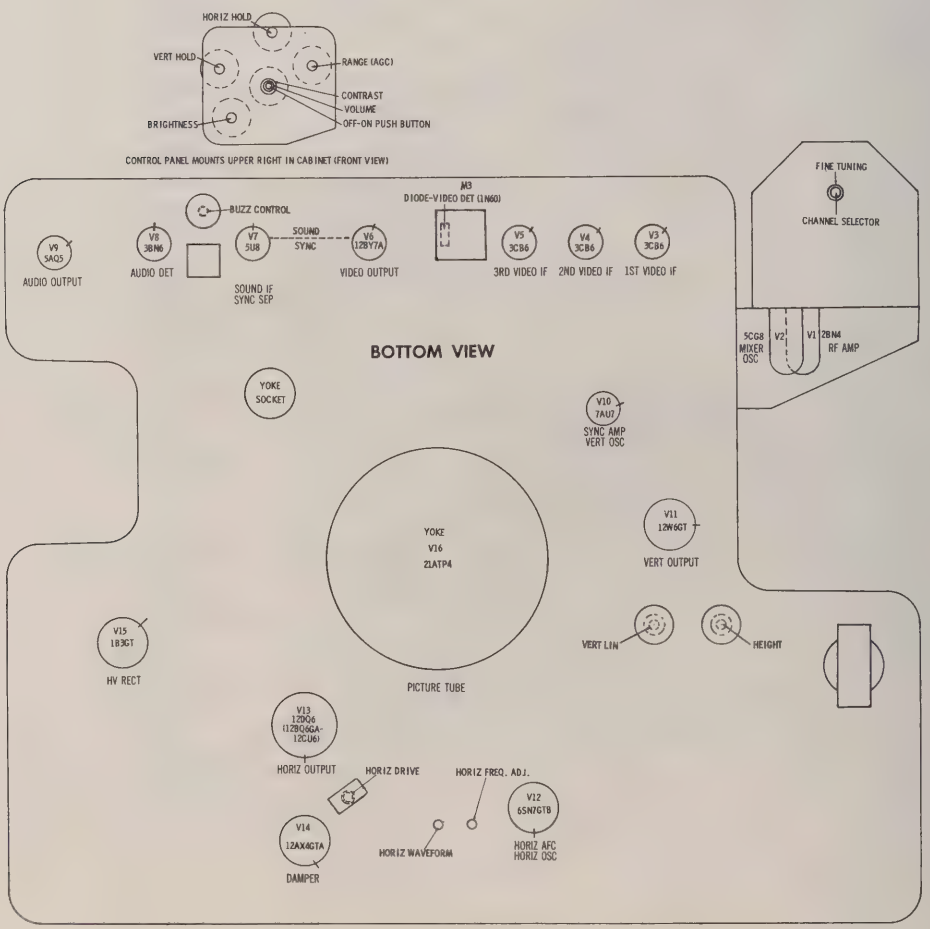
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	2BN4	0Ω	2Meg	1.5Ω	1Ω	†2700Ω	0Ω	2Meg		
V2	5CG8	10K	†8500Ω	0Ω	0Ω	1Ω	†2700Ω	†12K	0Ω	223K
V3	3CB6	800K	47Ω	5.5Ω	6.5Ω	†5500Ω	†5500Ω	0Ω		
V4	3CB6	800K	47Ω	6.5Ω	7.5Ω	†5500Ω	†5500Ω	0Ω		
V5	3CB6	.2Ω	180Ω	7.5Ω	8.5Ω	†2200Ω	†2200Ω	0Ω		
V6	12BY7A	• 55Ω	1Meg	0Ω	10.5Ω	10.5Ω	11.5Ω	†3700Ω	†1700Ω	0Ω
V7	5U8	†820K	100K	†150K	8.5Ω	9.5Ω	†82K	0Ω	0Ω	2.2Meg
V8	3BN6	• 230Ω	3.2Ω	5Ω	5.5Ω	†6500Ω	6Ω	†330K		
V9	5AQ5	250K	330Ω	10.5Ω	9.5Ω	†900Ω	†500Ω	250K		
V10	7AU7	• ‡1.8Meg	•1Meg	175Ω	11.5Ω	11.5Ω	†13K	40K	0Ω	12.5Ω
V11	12W6GT	TP	15Ω	†450Ω	†450Ω	2.2Meg	TP	12.5Ω	•1300Ω	
V12	6SN7GTB	400K	†56K	0Ω	1.2Meg	†35K	400K	3.5Ω	5Ω	
V13	12DQ6	NC	17Ω	TP	†10K	470K	TP	15Ω	100Ω	TOP CAP ‡10Ω
V14	12AX4GTA	TP	NC	¶	NC	†40Ω	NC	17Ω	20Ω	
V15	1B3GT	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP ‡310Ω
V16	21ATP4	1.5Ω	• 24K	Pin 6 †100K	Pin 10 ‡470K	Pin 11 •270K	Pin 12 3.5Ω			

¶ THIS READING CAN VARY GREATLY, (10K MINIMUM), DUE TO THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.

† MEASURED FROM OUTPUT OF M2. NC NO CONNECTION

‡ MEASURED FROM PIN 3 OF V14. TP TIE POINT

• THIS READING WILL VARY, CONTROL SET FOR NORMAL OPERATION.



TUBE PLACEMENT CHART

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

CHASSIS TOP VIEW

AIRLINE MODELS WG-4026A, B, WG-4027A, B, WG-5038A, B, WG-5039A, B

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No	USE	TYPE	NOTES
V1	RF Amplifier	3BN4	
V2	Mixer-Oscillator	3CG4	
V3	1st Video IF Amp	3CB6	
V4	2nd Video IF Amp	3CB6	
V5	3rd Video IF Amp	3CB6	
V6	Video Output	2BYTA	
V7	Sound IF Sync Sep	3U8	
V8	Audio Det	3BN6	
V9	Audio Output	3AQ5	
V10	Sync. Amp - Vert Osc	7AU7	
V11	Vert Output	12BW6GT	
V12	Horiz. AFC, Horiz. Osc	5SN7GTB	
V13	Horiz. Output	12DQ6	
V14	Damper	12AX6GTA	Note 1
V15	HV Rectifier	1B3GT	

Note 1 Some versions may use 12BQ6GA, or 12CU6.

PICTURE TUBE

ITEM No	REPLACEMENT DATA				NOTES
	AIRLINE PART No	CBS	GENERAL ELECTRIC	SYLVANIA PART No	
V16	21ATP4	21ATP4 ②	21ATP4A, 21ATP4J	21ATP4 ① 21ATP4A ① 21ATP4A ①	① Silver screen '65 ② Aluminized

ELECTROLYTIC CAPACITORS

ITEM No	RATING		REPLACEMENT DATA					
	CAP	VOLT	AEROVOX PART No	CORNELL DUBILIER PART No	MALLORY PART No	PYRAMID PART No	SANGAMO PART No	SPRAGUE PART No
C1	40	150	45X421	AFHS- 23	X40J61	TMS-24	T-955	TVL-1428
C2A	20	300	45X431	AFH24-01	PR20A1		MT-0525	R2376 *
B	20	300		60	HR205			
C	20	50			TC98			
C3A	20	300	45X420	AFH3-99-81	DD0046	FP420-76	T-115	TVL-3574-6
B	60	300			HR505	TC65	MT-0550	
C	40	50						
C4	4	90	45X418	PRS50V4	BBR4-50	TC30	MLS-50	MT-0504 TE 1303

* Non catalog item

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No	RATING		REPLACEMENT DATA							NOTES
	CAP	VOLT	AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C5	120			BPD-0001B	DD-12B	L10T1B	ED-120	UC-5313	5GA-T12	
C6	30									
C7	20									
C8	1300			EF-001	MPT-1000				503C-D1	
C9	1000			EF-001	MTT 10A1				503C-D1	
C11	47									
C12	5-45				529-5		532-B			
C13	5						532-B			N900
C14	4-45				529-6		532-B			
C15	4-45				529 6		532-B			
C16	47									
C17	500									
C18	.0001			BPD-001	DD-10B	BYA5DI	ED-1000	DC52L	5HK-D1	
C19	6.8									
C20	6.8									
C21	.000			EF-001	MPT-1000				503C-D1	
C22	.000			EF-001	MTT-1000				503C-D1	
C23	.000			EF-001	MPT-1000				503C-D1	
C24	47			S1 47	D5-470	L7SQ47	GP-47	UC-5447	5GA-Q47	
C25	47			S1 47	D5-470	L7SQ47	GP-47	UC-5447	5GA-Q47	
C26	680			BPD-00068	DD-68L	BYA10T68	ED-680	UC-5388	5GA-T68	
C27	56			NPO-S1 56	TCZ-56	C10G56C	TCG0-56			NP0
C28	680			BPD-00069	DD-68L	BYA10T68	ED-680	UC -5388	5GA-T68	
C29	68			NPO-S1 68	TCZ-68	C10G68C	TCG0-68		5TCC-Q68	NP0
C30	680			BPD-00068	DD-68L	BYA10T68	ED-680	UC-5388	5GA-T68	Note 1
C31	470			BPD-00047	DD-47L	BYA10T47	ED-470	UC-5347	5GA-T47	
C32	680			BPD-00068	DD-68L	BYA10T68	ED-680	UC-5388	5GA-T68	
C33	.047	200		BPD-05	DF-503	CUB2S47		GEM-2147	2TM-S47	
C34	.0001			BPD-001	DD-10B	BYA5DI	ED-1000	DC52I	5HK-D1	
C35	30			S1 47	D5-470	L7SQ47	GP-47	UC-5447	5GA-Q47	
C36	30		47X089							N33
C37	1	600		P48N-1	DF-104	CUB4P1		GEM-401	4TM-P1	
C38	047	200		BPD-05	DF-503	CUB2S47		GEM-2147	2TM-S47	
C39	47	200		P38N-47	DF-103	CUB2P47		GEM-2047	2TM-P47	
C40	.000			BPD-001	DD-10B	BYA5DI	ED-1000	DC52I	5HK-D1	
C41	.000			BPD-001	DD-10B	BYA5DI	ED-1000	DC52I	5HK-D1	
C42	.0001			BPD-01	DD-10B	BYA5SI	ED-01	DC5L	5HK-S1	
C43	3			NP0-S1 1.5	TCZ-1R5	C10V15C	TCG0-1.5	Z7-5515	5TCCB-V15	
C44	22									N470
C45	100									N1500
C46	.000			BPD-001	DD-10B	BYA5DI	ED-1000	DC52I	5HK-D1	
C47	.000			BPD-001	DD-10B	BYA5DI	ED-1000	DC52I	5HK-D1	
C48A	.0001			BPD-X0001	DDS-10B	BYCRDDI	EDS-001	DCD6DI	5HK-DDI	
B	.000									
C49	15									N220
C50	.0001			BPD-001	DD-10B	BYA5DI	ED-1000	DC52I	5HK-D1	
C51	5000			BPD-005	DD-503	BYA10D5	ED-001	DC52S	5HK-D5	
C52	.0047	600		BPD-0047	DD-472	CUB2D47	GP-4700	GEM-6247	6TM-D47	
C53	330		47X370	1454-00033		SR5T33			MS-333	
C54	5000			BPD-005	DD-503	BYA10D5	ED-001	DC52S	5HK-D5	
C55	047	400		BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	
C56	01	600		BPD-01	DD-103	CUB4S1	GP-10000	GEM-401	4TM-S1	
C57	1	400		P48N-1	DF-104	CUB4P1		GEM-401	4TM-P1	
C58	047	400		BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	
C59	033	300	RCP10M3233M	BPD-033	DF-303	CUB3S33	ED-02	GEM-3233	3TM-S33	
C60	047	600		BPD-05	DF-503	CUB6S47		GEM-5147	6TM-S47	
C61	18		RCM20B180K	1454-00018		S2S5G8			MS-418	
C62	82		RCM20B830K	1454-00082		S2R5G82			MS-482	
C63	100			1454-0001		S2R5T1			MS-31	
C64	047	400		BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	
C65	047	200		BPD-05	DF-503	CUB2S47		GEM-2147	2TM-S47	
C66	033	300	RCP10M3325M	BPD-03	DF-303	CUB3S33	ED-03	GEM-3233	3TM-S33	
C67	47	200		P38N-47		CUB2P47		GEM-2047	2TM-P47	
C68	82			1454-00023		S2R5T23			MS-323	
C69	91	400		BPD-05	DD-105	CUB4S1	GP-10000	GEM-411	4TM-S1	
C70	820		RCM20B821K	1454-00082		L85T82			MS-382	
C71	470-700		17A237							
C72	1000		80X1	BPD-001	DD-102	BYA5DI	ED-1000	DC52I	5HK-D1	
C73	047	400		BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	
C74	56	5000	47X755		DD60-5B0				7GQA-Q56	
C75	047	400		BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	

CAPACITORS (cont)

ITEM No	RATING		REPLACEMENT DATA						NOTES
	CAP	VOLT	AIRLINE PART No	AEROVOX PART No	CENTRALAB PART No	CORNELL DUBILIER PART No	ERIE PART No	MALLORY PART No	SPRAGUE PART No	
C75	1,000	.000	47X815							
C77A	.000			BPD-2X001	DD2-102	BYC6DDI	ED2-001	DCD52I	5HK-2DI	
B	.000									

Note 1 A 500MMF is used in some versions.

CONTROLS

ITEM No	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESIS-TANCE	WATTS	AIRLINE PART No	CENTRALAB PART No	CLAROSTAT PART No	IRC PART No	MALLORY PART No	
R1A	.000Ω		78X25					Contrast
B	1Meg							Volume
R2A	500K		40X416	AB-59	A47-500K-S	QU-133	L59	Brightness
B	Shaft			AK-9	RS-3-76	NQ	DS-37	
R3A	2.5Meg		40X415	AD-742	A47-2.5Meg-S	QU-138	U105	Vert. Hold
B	Shaft			AK-9	RS-3-76	NQ	DS-37	
R4A	50K		40X414	AB-34	A47-50K-S	QU-123	U95	Horiz. Hold
B	Shaft			AK-8	RS-3-76	NQ	DS-37	
R5	5 Meg		40X417					Range-Note 1
R6A	2.5Meg		40X398	BX-82	A47 2.5Meg-S	QU-239	SU-585	Height
B	Shaft			Not Req	RN-4	TQ	Not Req	
R7A	5K		40X399	AB-6	A47-1500-S	QU-109	TAP15L	Vert. Lin.
B	Shaft			AK-19	RN 3	TQ	Not Req.	
R8	500Ω	2	40X397		35-500		FL-500	Buzz
R9	4k &40Ω	2	26X395					Volume-wire wound-Note 2
R10A	500K		40X422	B-59	A47-500K-S	QU-133	U50	Brightness
B	Shaft			Not Req	RS-3	Not Req	Not Req	

Note 1. Value may vary from 7 to 10 megs.
Note 2 Consists of 4Ω element and a 10Ω element with a common rider

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	AIRLINE PART No	IRC PART No	
R11	4700Ω			BTS 4700	
R12	10000			BTS-1000	
R13	39000			BTS-3900	
R14	470K			BTS-470K	
R15	10000			BTS-1000	
R16	68000			BTS-6800	
R17	10K			BTS-10K	
R18	10K			BTS-10K	
R19	2.2Meg			BTS-5600	
R20	56000				
R21	470Ω			PW4-5000	
R22	5000Ω	4	43X333	BTS-47 5%	
R23	47Ω 5%		BB3470	BTS-100	
R24	10Ω				
R25	10000			BTS-470	
R26	470Ω			BTS-47 5%	
R27	47Ω 5%		BB3470		
R28	22K				
R29	47K			BTS-470	
R30	470Ω			BTS-180	
R31	180Ω				
R32	1Meg			BTS-3900	
R33	3900Ω			BTS-1Meg	
R34	1Meg			BTS-47	
R35	47Ω		BB4470	BTS-33K	
R36	33K				
R37	3600Ω	4	43X331	BTS-100K	
R38	100K			BTS-180K	
R39	180K			BTS-1.5Meg	
R40	1.5Meg			BTS-100K	
R41	100K			BTS-82K	
R42	82K			BTS-68K	
R43	68K			BTS-330K	
R44	330Ω			BTS-330K	
R45	330K			BTS-4700	
R46	4700Ω			BTA-470	
R47	470Ω	1		BTA-330	
R48	330Ω	1		BTS-150K	
R49	150K			BTS-2.2Meg	
R50	2.2Meg			BTS-820K	
R51	820K				

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	AIRLINE PART No	IRC PART No	
R52	680K			BTS-680K	
R53	47K			BTS-47K	
R54	6800Ω			BTS-6800	
R55	47000			BTS-47K	
R56	680K			BTS-680K	
R57	470K			BTS-470K	
R58	33K			33K	
R59	470K			BTS-470K	
R60	6800Ω			BTS-6200	
R61	15K			BTS-15K	
R62	2.2Meg			BTS-2 2Meg	
R63	100Ω			BTS-100	
R64	6800	1		BTA-680	
R65	5600				
R66	5800				
R67	220K				
R68	330K				
R69	680K			BTS-820K	
R70	130K				
R71	47K				
R72	82K				
R73	330K				
R74	1800Ω				
R75	82K				
R76	22K				
R77	10K			BTS-10K	
R78	1Meg			BTS-1Meg	
R79	56K			BTS-56K	
R80	68Ω		B65690	BTS-68	
R81	470K			BTS-470K	
R82	10K	2		BTS-10K	
R83	100Ω	2		BTS-100	
R84	5600Ω			BTS-5600	
R85	1700Ω	10	43X394		
R86	2KΩ	10	43X395	PW10-25	
R87		20	43X329		Note 1
R88	5.5Ω		43X393		
R89	68K			BTS-68K	
R90	82K			BTS-82K	
R91	1.5Meg			BTS-1.5Meg	
R92	150Ω	2		BTS-150	

Note 1. A temperature compensating resistor- 20Ω Cold.

TRANSFORMER (MISC)

ITEM No	RATING ①				REPLACEMENT DATA					
	PRI	SEC 1	SEC 2	SEC 3	AIRLINE PART No	Halldorson PART No.	Merit PART No.	Stancor PART No	Thordarson PART No	Triad PART No
T1	117VAC	24V			53X361	F52T2 ②	P-2962 ③	P-8469 ④	26F66 ⑤	F-40X ⑥
	& 55A	& 2A								
T2	117VAC	6.3V			54X17 ⑦	F55U1 ② ⑦	P-2944 ③ ⑦	P-6514 ④ ⑦	21F00 ⑤ ⑦	F-12X ⑥
	& 5A	& 2A								

1 Measurements taken under load conditions
2 Drill one new mounting hole
3 Tape center tap on secondary winding
4 Alternate part #54X16 used in Models ending in "A".

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No	USE	REPLACEMENT DATA								
		AIRLINE PART No.	Halldorson PART No	Merit PART No	RCA TYPE No	Ram PART No	Stancor PART No	Thordarson PART No	Triad PART No	
T3	Vert Osc Trans	54X10	B6702	A 3003	20VT1	V405	A-8135	26A03	A 17X	
T4	Horiz Output Trans	53X359-A	FB4-91 ①	HVO-38 ①	25T1 ①	X084 ①	HO-283 *	F1Y-98 ①	D 50 L	
				* ②				* ②	* ①	
T5	Vert Output Trans	54X13-A	FB4-91 ①	HVO-38 ①	25T1 ①	X084 ①	HO-283 *	F1Y-98 ①	D 50 L	
				* ②				* ②	* ①	
		54X13 ②	Z1W00 ③ ④	A 2023 ① ④		V302 ① ④	A-8144 ⑤	26S72 ① ④	A-40X ①	
			Z1W01 ③ ④	A 2022 ① ④		V302 ① ④	A-8140 ⑤	26S72 ① ④	A-40X ①	
T6A	Yoke (90°) Horiz (44MH)	54A297 ① ② 24A53 ②	DF607 ③ ⑤	MDF-92 ③ ⑤	23SD1 ③ ⑤	Y90F10/43 ③ ⑤	DY-38A ③ ⑤	Y 16 ③ ⑤	Y 41-1 ③ 6 YC-1 ⑦	
	Vert (40MH)	54A297 ② 24A53 ②	DF607 ③ ⑤	MDF-92 ③ ⑤	23SD1 ③ ⑤	Y90F9.43 ③ ⑤	DY-38A ③ ⑤	Y 16 ③ ⑤	Y 41-1 ③ 6 YC-1 ⑦	

1 Drill new mounting hole(s)
2 Alternate part number
3 Use 8 to 1 turns ratio
4 Connect as auto transformer
5 Cut and tape green lead.
6 Includes resistors R55 and R56
7 Yoke rear cover and centering device.
8 Use original rear cover and centering device.
9 Use original horizontal damping network.
* This part may be superceded by Parts Manufacturer's introduction of special unit for this application.

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type is Listed

	ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	RCA Replacement Connections	Ram Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
	8	9	9	9	8	8	9	9
	3	7 or 5	7 or 5	7 or 5	7 or 5	3	7 or 5	7 or 5
	2	NC See Note ②	NC See Note ②	NC See Note ③	NC See Note ②	2	NC See Note ③	NC See Note ③
	1	1	1	1	1	1	1	1
Special Notes →		9	9	9	9		⑨	⑨

⑨ Install new damping network consisting of approx. 100MMF & 2KV and 1000Ω & 1 Watt connected in series across terminals #3 and #7 of horizontal yoke

TRANSFORMER (AUDIO OUTPUT)

ITEM No	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI	SEC	AIRLINE PART No.	Halldorson PART No	Merit PART No	Stancor PART No	Thordarson PART No	Triad PART No	
T7	6200Ω	6 &16	51X180	Z1000 ① ②	A-2900 ① ③	A-3537 ①	24S80 ① ②	S-51X ① ②	① Drill one new mounting hole. ② Tape center tap on primary winding

SPEAKER

ITEM No	TYPE				REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C.	IMP	AIRLINE PART No	QUAM PART No	
SP1	5"	PM	6-8#		12A540 ①	5A07RZ6 4	① Used in table models
	6	PM	6-8#		12A539 ②		② Used in console models

COILS (RF-IF)

ITEM No	USE	REPLACEMENT DATA				NOTES
		AIRLINE PART No	MEISSNER PART No	MERIT PART No.	MILLER PART No	
L1	39MC Trap	9A2369		TV-153	6235	
L2	1st. Video IF	9A2365		TV-151	6225	
L3	2nd. Video IF	9A2363			6222	Includes 47.25MC trap
L4	3rd. Video IF	9A2364			6221	Includes 41.25MC trap
L5	4th. Video IF	9A2370				Includes capa., 30 microhenries coil & M3
L6	Tweet Choke	9A2375	19-3036	TV-160	6176	30 Microhenries
L7	Shunt Peaking Coil	36A13	19-4150	TV-154 *	6130 *	150 Microhenries, wound on 2.2K
L8	4.5MC Trap	9A2356	30-1004	TV-155	1469	
L9	Series Peaking Coil	36A38	19-4400 a	TV-156 a	6132 a	350 Microhenries wound on 5800Ω resistor
L10	Shunt Peaking Coil	36A33	19-3250 e	TV-158 e	6161 e	225 Microhenries wound on 2200Ω resistor
L11	1st. Sound IF	9A2366	30-1004	TV-151	1469	
L12	2nd. Sound IF	9A2305	17-3486	TV-113	6203	
L13	Quadrature Coil	9A2367	30-1002		1452	
L14	RF Choke	9A2380	19-1001		4004	1.5 Microhenries

* Parallel with 22K resistor.
a Parallel with 5800Ω resistor
e Parallel with 2200Ω resistor

TRANSFORMER (HORIZ. OSC.)

ITEM No	DC RES.		REPLACEMENT DATA						NOTES
	PRI	SEC	AIRLINE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No	RCA TYPE No	Ram PART No	Thordarson PART No	
L15	85Ω *		9A237.		TV-165	6311 ①				15-85 millihenries-Horiz. Freq. 7.5-15.5 millihenries Horiz. Waveform
L16	82Ω.		9A2372							

* Tapped @ 50Ω
① Enlarge mounting hole

FILTER CHOKE

ITEM No	RATINGS			REPLACEMENT DATA						
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE 10 CURRENT 1000 (%)	AIRLINE PART No.	Halldorson PART No	Merit PART No.	Stancor PART No.	Thordarson PART No	Triad PART No	NOTES
L17	.265A	40Ω	.7 HY	52X95-2	C5037 ①	C-2998 ①	C-2330 ①	28C44 ①	C-17X ①	

① Drill one new mounting hole

PARTS LIST AND DESCRIPTIONS (Continued)

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA						
	CURRENT (Measured)	AIRLINE PART No.	FEDERAL PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL PART No.	MALLORY PART No.	RADIO RECEPTOR PART No.	SARKES TARZIAN PART No.
M1	.265A	66X16 ①	1090A ①	1N1007 ②	RS300SL ①	6S300A ①	6Q4 ①	300 ①
M2	.265A	66X16 ①	1090A ①	1N1007 ②	RS300SL ①	6S300A ①	6Q4 ①	300 ①

① Selenium type. ② Germanium type.

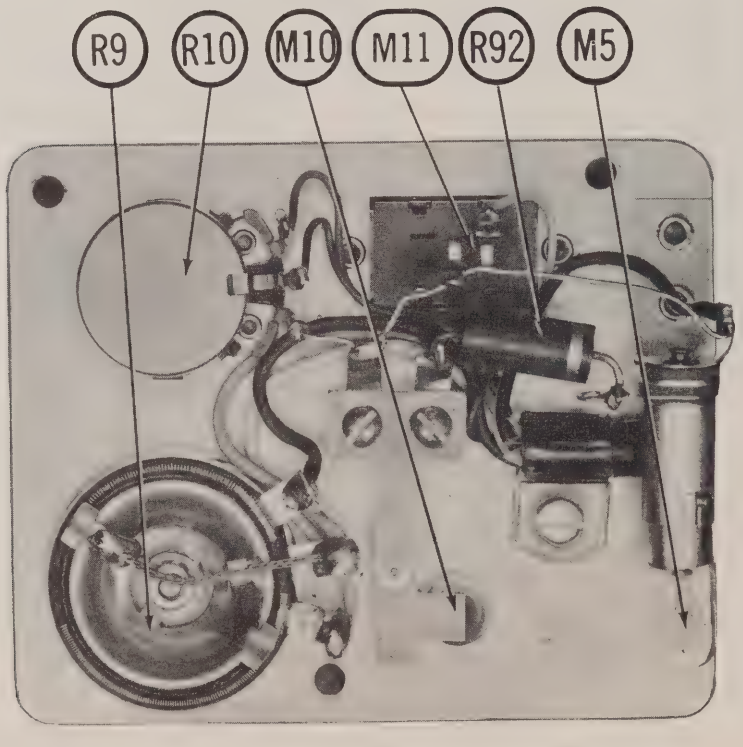
CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA		NOTES
		AIRLINE PART No.	SYLVANIA PART No.	
M3	1N60 *		1N60	Video Detector (Pigtail)

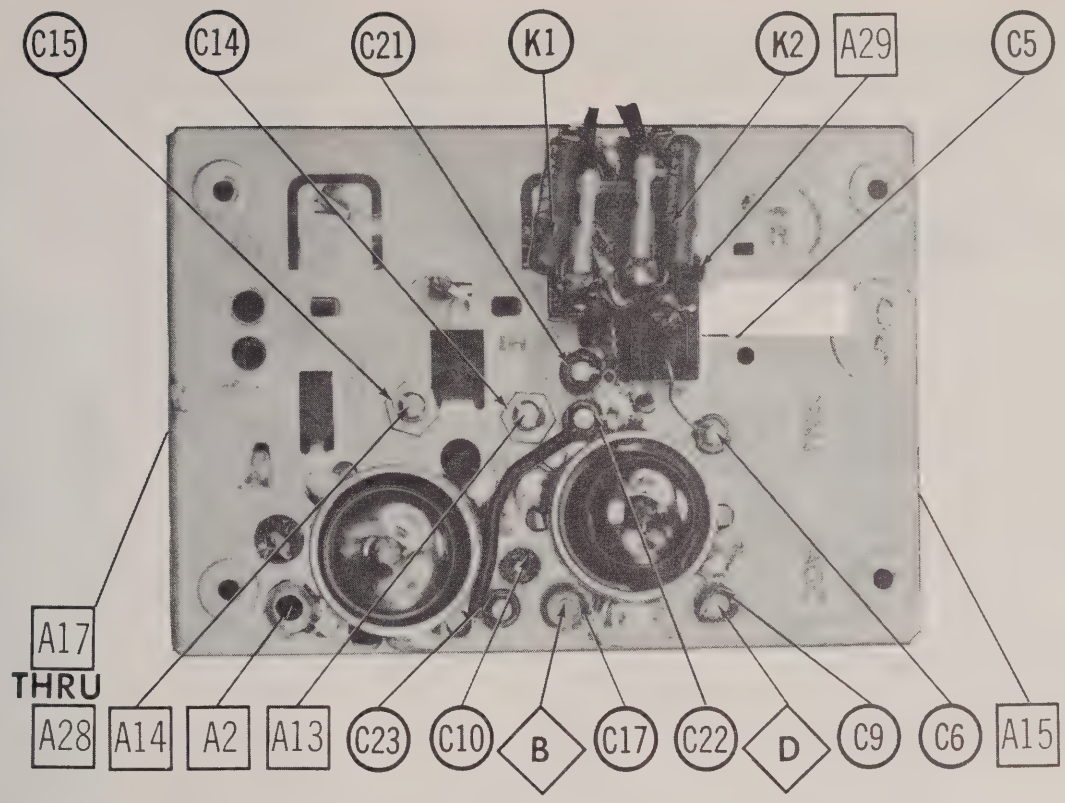
* A CK706 may be used in some versions.

MISCELLANEOUS

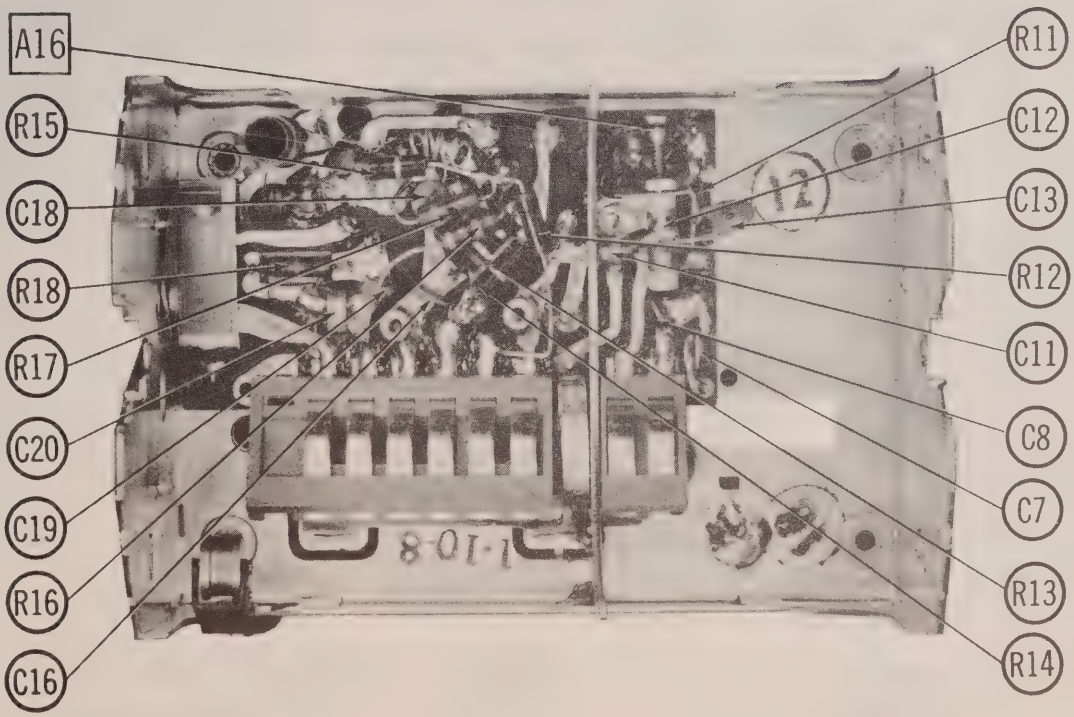
ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M4	Dial Light	S-38A221	#51 Type, A #15 lamp used in models ending in "A"
M5	Dial Light		#313 Type, Remote control
M6	Tuner	25A1151	
M7	Switch	2A464	On-off, push type
M8	Switch	2A472	Sensing, contact type
M9	Switch	2A467	Remote/Manual, wafer type and rotary type
M10	Switch	2A469	Channel Selector, Contact type (Remote control head)
M11	Switch	2A466	On-off, slide Type, SPST (Remote control head)
M12	Relay	2A470	Remote, control
M13	Circuit Breaker	2A461	
M14	Centering Device	2A435	Includes yoke rear cover
M15	Ion Trap	2A421	
M16	Motor	22A223	Power tuning
M17	Switch		Pre-set Board (Rotary wafer)
	Yoke Clamp	30X611	
	Safety Glass	17X193-1	
	Mask	S-38A220	
	Knobs	10A861-2	Secondary controls
	Knob	10A870-11	Channel selector, mahogany
	Knob	10A871-1	Fine tuning, mahogany
	Knob	10A872-1	Volume, mahogany
	Knob	10A873-1	Contrast, mahogany
	Knob	10A870-12	Channel selector, oak
	Knob	10A871-2	Fine tuning, oak
	Knob	10A872-2	Volume, oak
	Knob	10A873-2	Contrast, oak
	Knob	10A883	Remote - local
	Knob	10A885	Brightness, volume
	Pushbutton	10A884	
	Bottom Cover	34X596	Remote control
	Case	34X595-1	Remote control
	Cable Assy.	S-38A235	



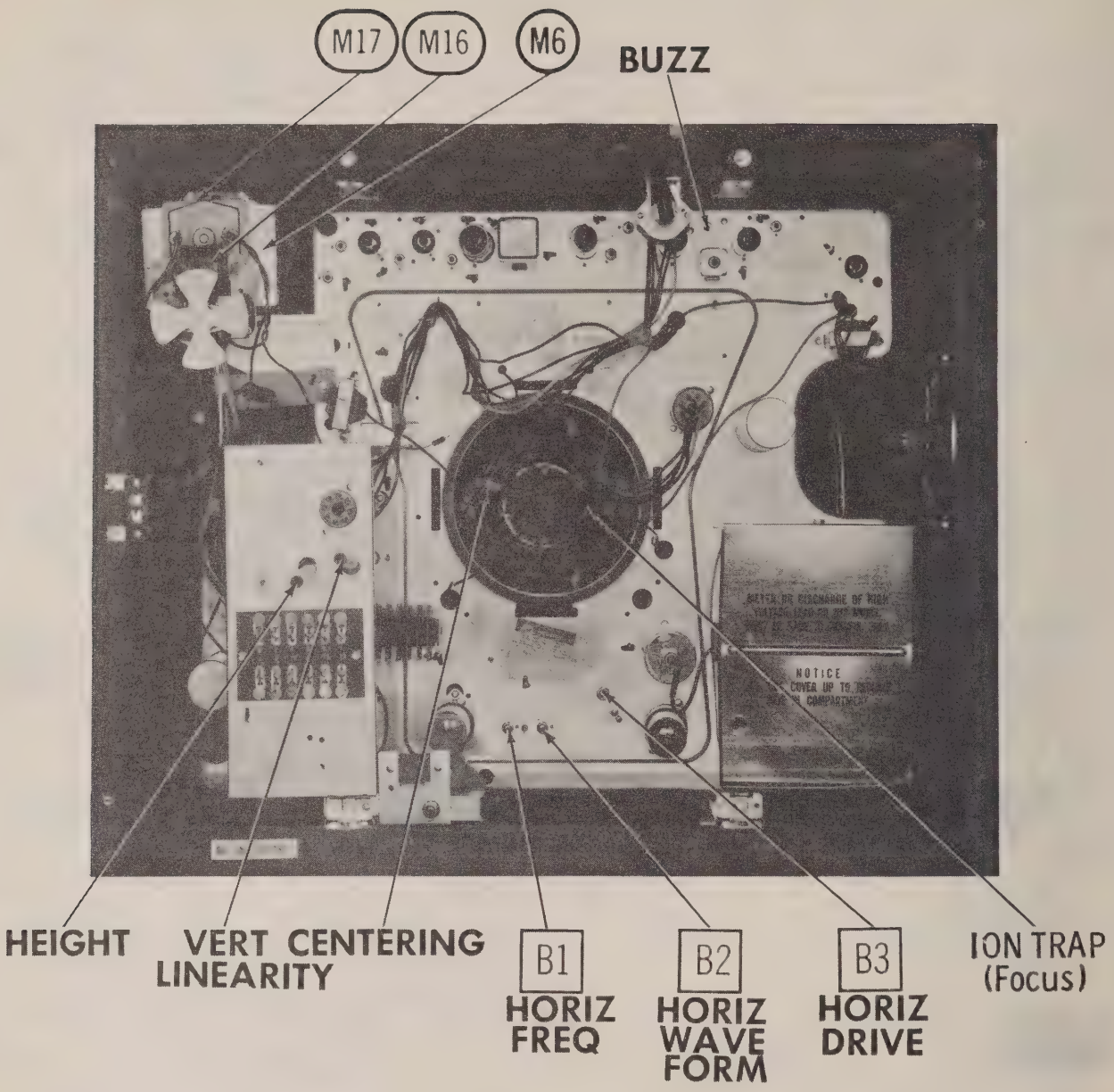
REMOTE CONTROL CHASSIS



RF TUNER-TOP VIEW



RF TUNER-BOTTOM VIEW



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

1. Turn the set on and tune in a TV station, preferably with a test pattern.
2. Turn the horizontal hold control fully clockwise and adjust the horizontal frequency slug (B1) until the picture is just about to tear out of sync (noticeable at the top of the picture). Turn the hold control to the center of its range.
3. Connect the vertical amplifier of the scope to point (E) and low side to chassis. Adjust the horizontal waveform slug (B2) for equal amplitudes of the round and sharp peak as in Fig. 6. Keep the picture in sync with B1 while adjusting B2.
4. Turn the contrast control fully counter clockwise and the brightness control up so the picture appears washed out. Turn the horizontal drive trimmer (B3) clockwise until white vertical bars appear in the left center portion of the raster, then turn B3 counter clockwise until the white bars just disappear.

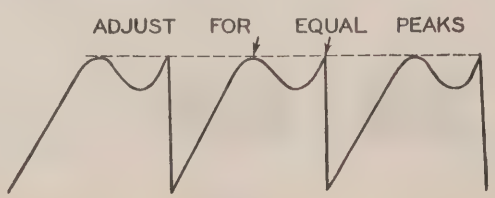


FIG. 6

PHOTOFACT* Folder

*TRADE MARK

RETMA MEMBER

CORONADO
MODEL TV3-9397A

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DENVER, COLORADO

Coronado Model TV3-9397A

TRADE NAME	Coronado, Model TV3-9397A
SUPPLIER	Gambles-Skogmo, Inc., 15 North 8th. Street, Minneapolis, Minn.
TYPE SET	Television Receiver
TUBES	Thirteen
POWER SUPPLY	110-120 Volts AC - 60 Cycles RATING - 115 Watts, 1.14 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

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CORONADO
MODEL TV3-9397A

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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*TRADE MARK
RETMA MEMBER

CORONADO MODEL TV3-9397A

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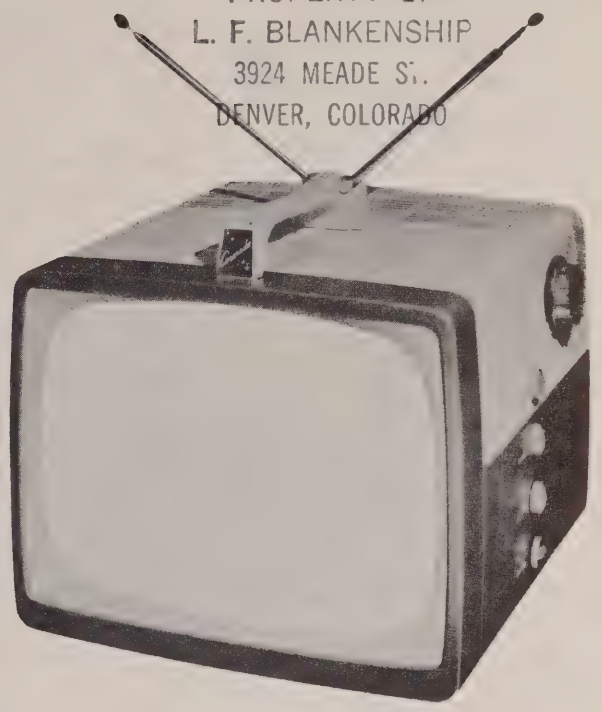
DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 7 push-on type control knobs.
2. Remove 6 metal screws, 2 antenna leads and rear cover.
3. Remove picture tube socket, Ion trap, HV lead and 2 speaker leads.
4. Remove 2 metal screws holding speaker and remove speaker.
5. Remove 2 metal screws holding AC interlock bracket.
6. Remove 2 chassis bolts from bottom.
7. Remove 1 top chassis bolt (middle one in handle).
8. Remove chassis.



MODEL

TV3-9397A

CAUTION NOTE

ONE SIDE OF AC LINE CONNECTED TO CHASSIS

Care should be exercised when connecting test equipment or physcially contacting chassis.

CORONADO
MODEL TV3-9397A

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the VHF tuner oscillator circuit may be accomplished by removing the channel selector and fine tuning knobs. The HIGH band adjustments may be made with the slug located near the right side, the LOW band by slug near the bottom of the tuner. Adjust from highest to lowest channel.

PICTURE TUBE SAFETY GLASS CLEANING

1. Remove the front handle mounting screw.
2. Remove 2 metal screws on the bottom, holding the front.
3. Remove the front of the cabinet.
4. Remove the clamps holding the safety glass and remove the glass.

FOCUS

Focus may be varied by placement of a strap on the picture tube base between pins 6 and 2 or 6 and 10. Readjust Ion trap for best focus consistent with maximum brightness.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

To adjust the horizontal oscillator, remove the rear cover and supply power to the set. Set the horizontal hold control at mid-position and adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

FUSES

A 4.7Ω fusible resistor (R68) is used for LV power supply protection.

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube. Rotate the two rings around the neck of the tube until the picture is properly centered.

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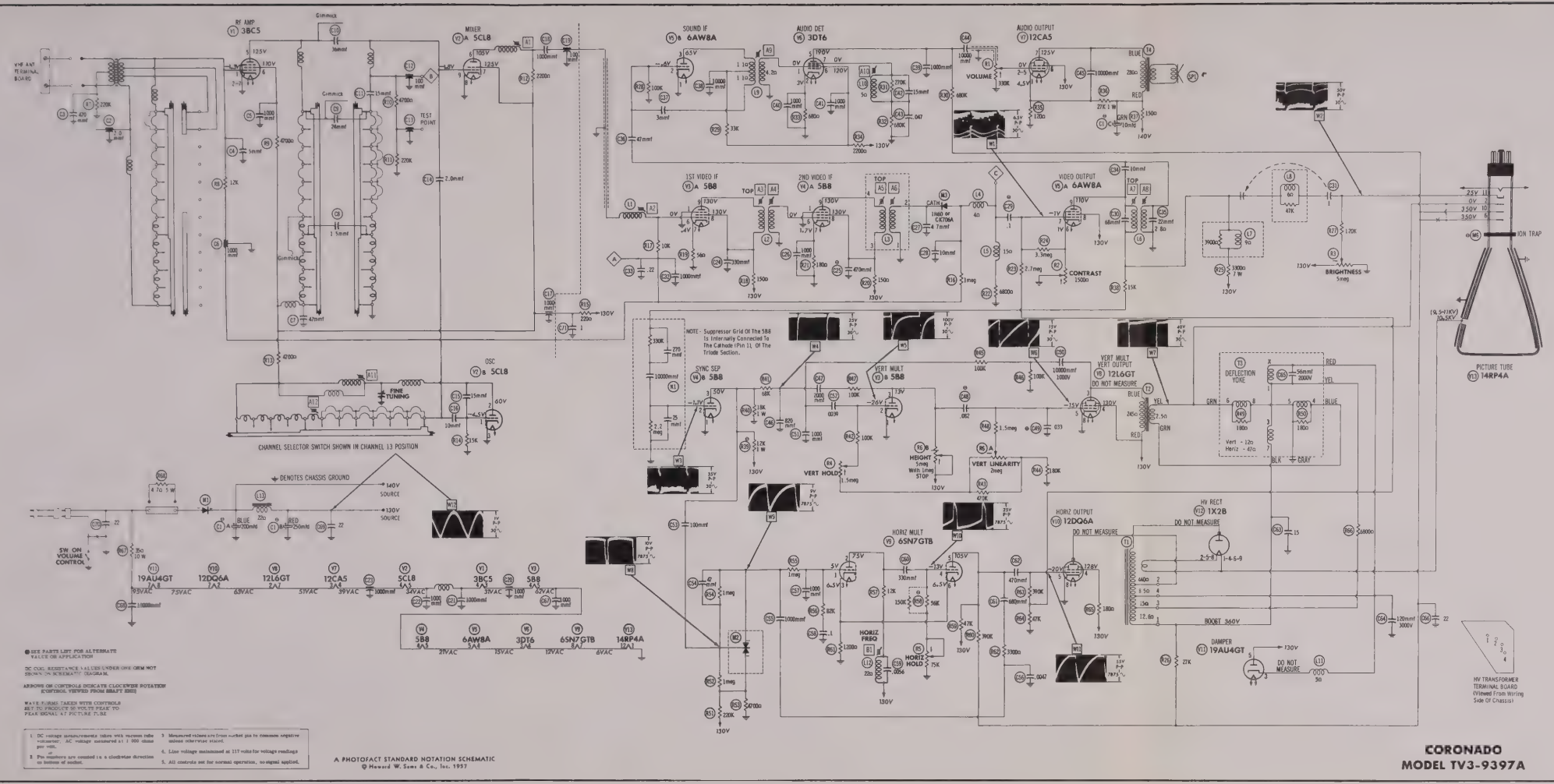

CORONADO
MODEL TV3-9397A

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK TO PEAK SIGNAL AT PICTURE TUBE

1. DC voltage measurements taken with vacuum tube voltmeter. AC voltage measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction as bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings
5. All controls set for normal operation, no signal applied.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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CORONADO
MODEL TV3-9397A

TUBE PLACEMENT CHART

PROPERTY OF
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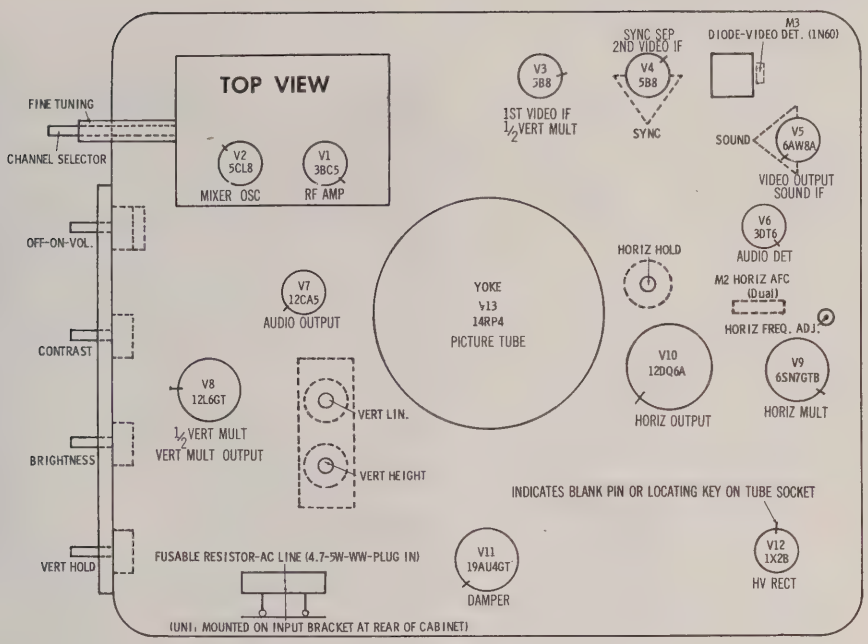
3924 MEADE ST.
DENVER, COLORADO



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

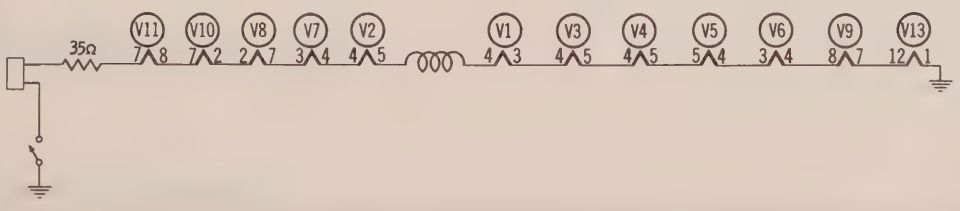
POWER SUPPLY FAILURE
No raster, no sound - **Fusible Resistor (R68), Rectifier (M1)**

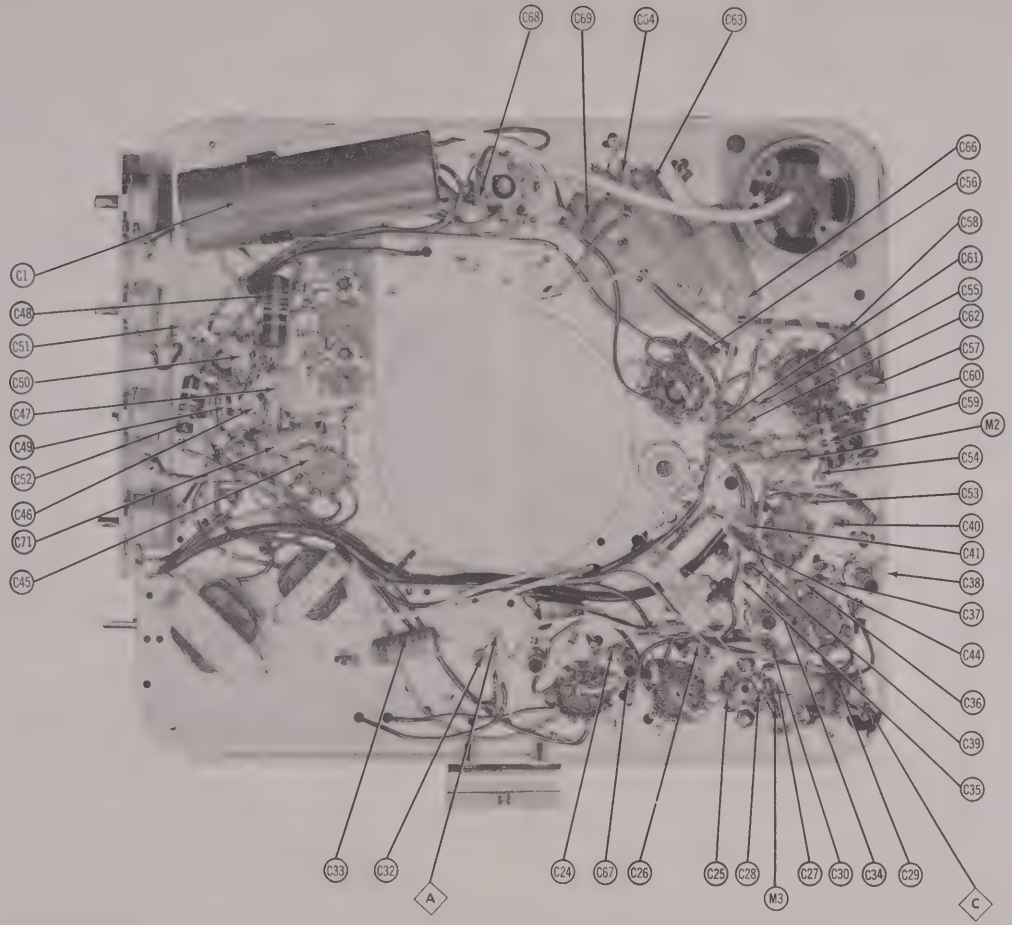
LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - **V3, V4, Diode (M3), V5**
No pic, no sound, has snow - **V1, V2**
No pic, has sound, has raster - **V5, V13**
Has pic, no sound - **V5, V6, V7**

SYNC FAILURE
No vert. sync - **V3, V4, V8**
No horiz. sync - **V4, Diode (M2), V9**
No vert. or horiz. sync - **V4**

SWEEP FAILURE
No raster, has sound - **M2, V9, V10, V11, V12, V13**
No vertical deflection - **V3, V8**
Poor vert. linearity or foldover - **V3, V8**
Poor horiz. linearity or foldover - **V9, V10, V11**
Narrow picture - **V9, V10, V11, M1**
Vert. off freq. - **V3, V4, V8**
Horiz. off freq. - **V4, M2, V9**

Since this receiver employs tubes used in a series filament network, an open filament in any tube in the series will cause the set to be inoperative. (See circuit below.)





CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use an isolation transformer to protect the test equipment.
The high voltage lead should be securely taped and kept away from the chassis.

VIDEO IF ALIGNMENT

Connect the negative lead of a 3 volt bias battery to point Ⓐ. Positive to chassis.
Disable oscillator by replacing Mixer-Osc. tube 5CL8 (V2) with a 5CL8 with pin 1 removed.
Short the antenna terminals.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	1000MMF ceramic capacitor	High side to point Ⓑ. Low side to chassis.	44.0MC (10MC Swp)	42.75MC 45.75MC	Any channel.	Vert. amp. thru detector (Fig. 1) to plate, pin 9 of 5B8 (V3). Low side to chassis.	A1, A2	Adjust for response similar to Fig. 2 with markers in proper positions.
2.	"	High side to pin 6 (grid) of 5B8 (V3). Low side to chassis.	"	"	"	Vert. amp. thru detector (Fig. 1) to plate, pin 9 of 5B8 (V4). Low side to chassis.	A3, A4	"
3.	"	High side to pin 6 (grid) of 5B8 (V4). Low side to chassis.	"	"	"	Vert. amp. to point Ⓒ. Low side to chassis.	A5, A6	"
4.	"	High side to point B. Low side to chassis.	"	"	"	"		Retouch A1 thru A6 as needed to correct for curve similar to Fig. 3. Remove bias and replace 5CL8 (V2).

SOUND IF ALIGNMENT

Set the contrast control fully clockwise. Set volume control at midrange.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	1000MMF ceramic capacitor	High side to point Ⓒ. Low side to chassis.	Not used.	4.5MC (400∿ 30% AM Mod)	Any non-interfering channel.	Vert. amp. thru detector (Fig. 4) to pin 11 (cathode) of picture tube. Low side to chassis.	A7, A8	Turn A7 fully counter clockwise. Turn A8 fully clockwise. Turn A7 clockwise for MINIMUM 400∿ indication on scope.
6.	"	"	4.5MC (15KC Swp)	Not used.	"	Across secondary of output transformer.	A8, A9, A10	Use only enough sweep generator output to provide usable pattern on scope. Turn A10 fully counter clockwise. Adjust A8, A9 and A10 for maximum indication on scope. Remove test equipment and tune in a TV station. Retouch A10 for MINIMUM buzz.

OSCILLATOR ALIGNMENT

Turn the set on and tune in the highest high band channel (7-13) operating in the area and adjust A11 for clearest picture and best sound. A11 is located below and to the right of the tuning shaft. Switch the channel selector to the highest low band channel (2-6) operating in the area and adjust A12 for clearest sound and best picture. A12 is located directly to the left of the tuner shaft.

RF AND MIXER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

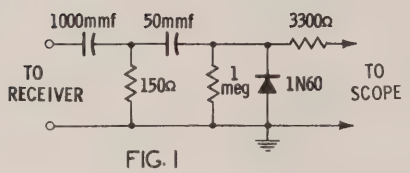


FIG. 1

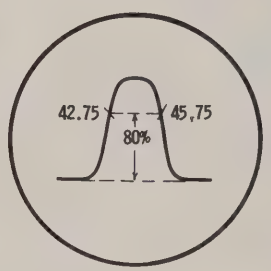


FIG. 2

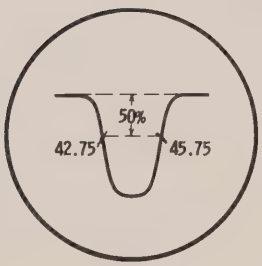


FIG. 3

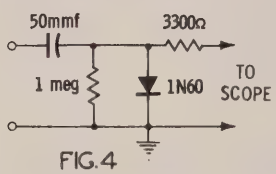
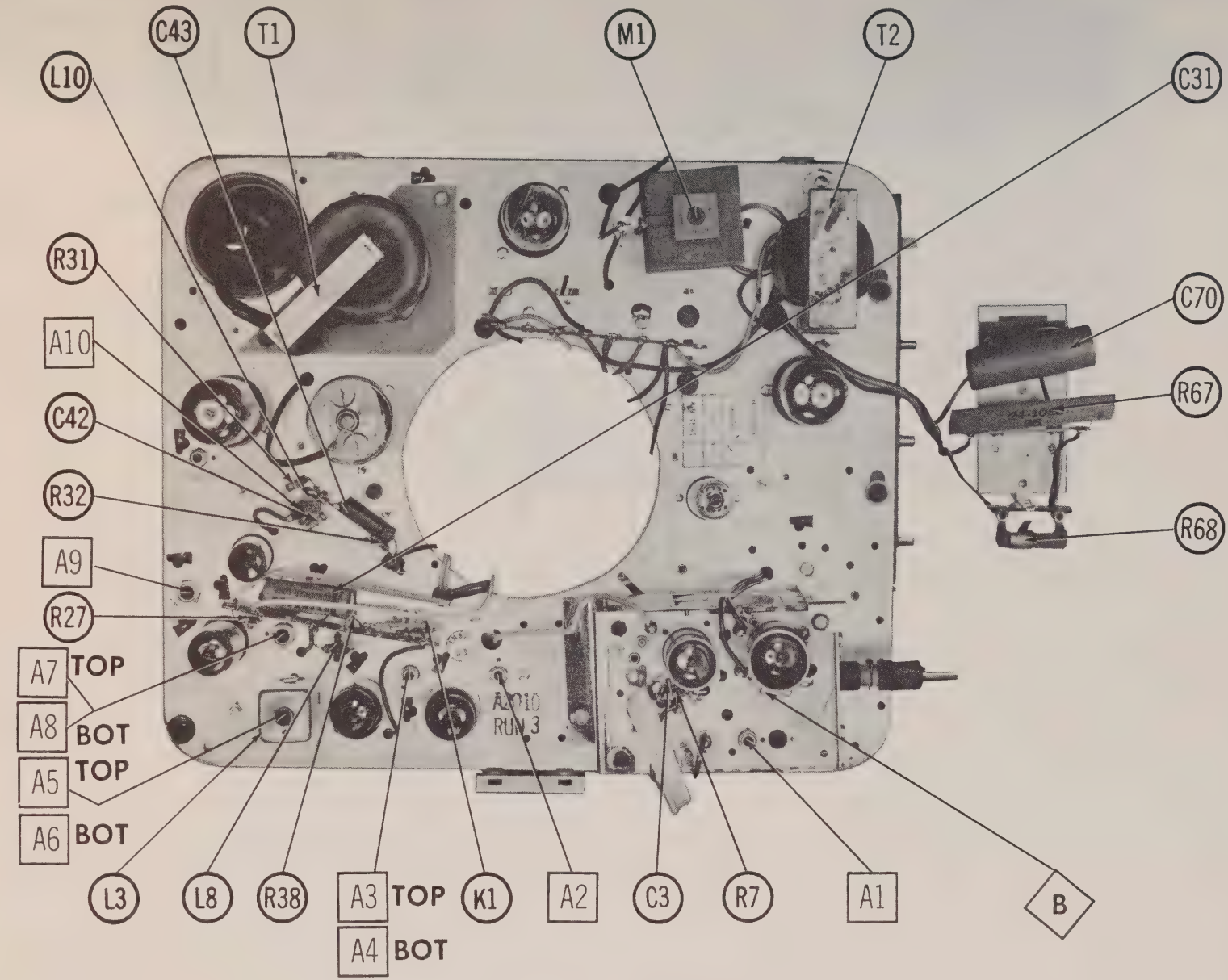
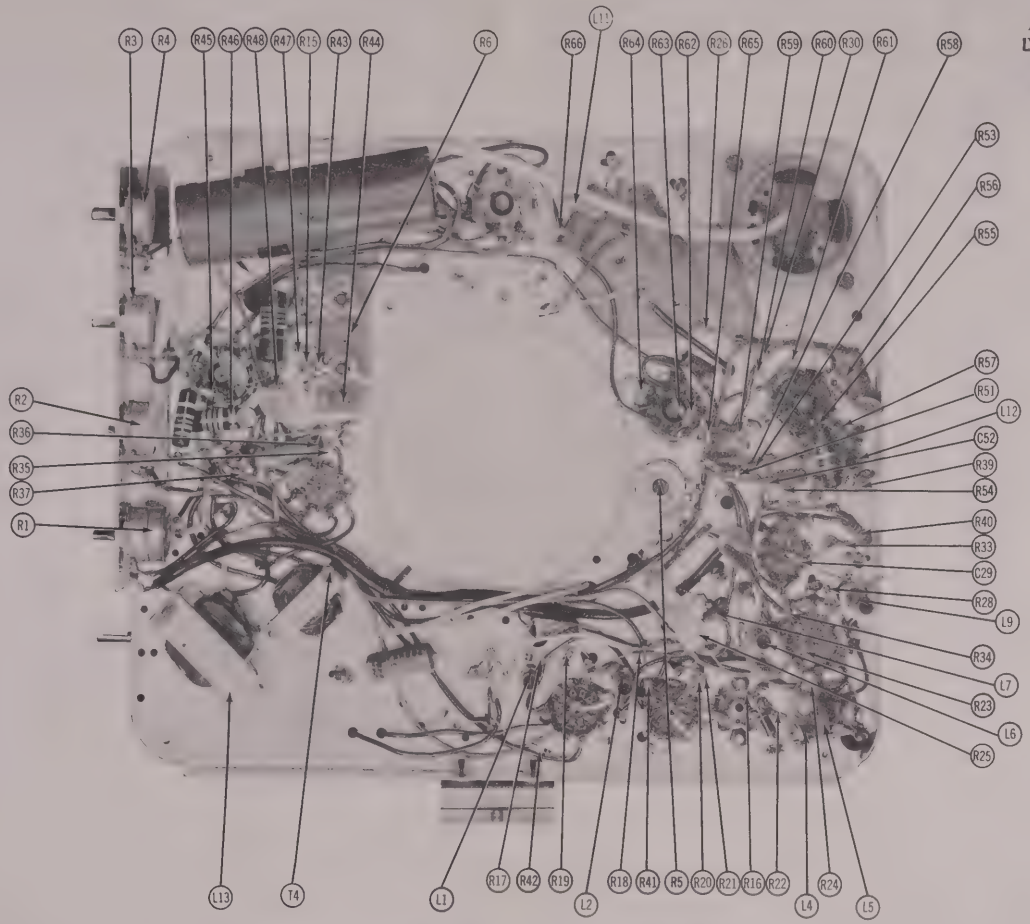


FIG. 4



CHASSIS TOP VIEW

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE S..
DENVER, COLORADO

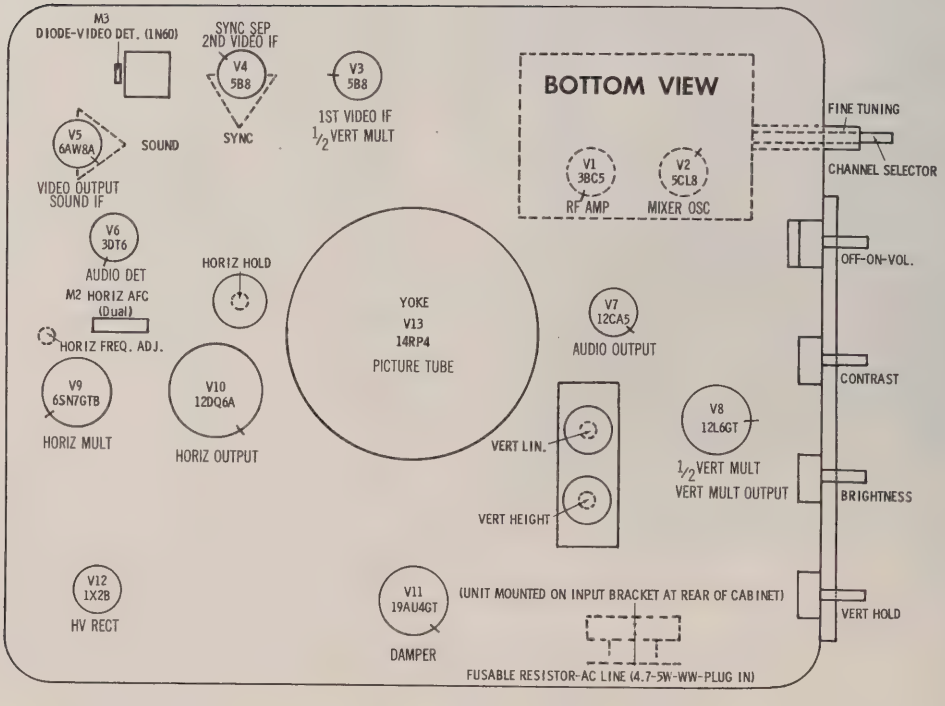


CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

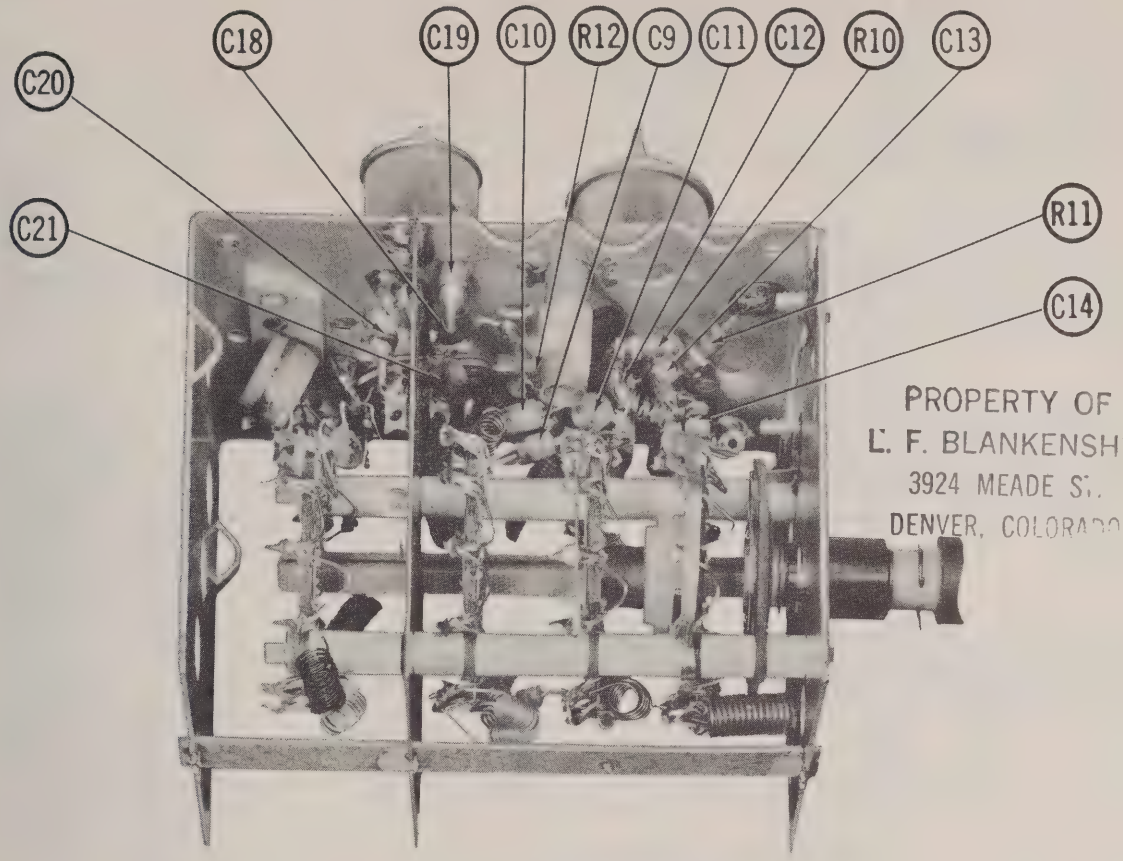
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	3BC5	1Meg	0Ω	6.5Ω	7Ω	†240Ω	†5000Ω	0Ω		
V2	5CL8	15K	†5000Ω	0Ω	7.5Ω	7Ω	†2400Ω	†240Ω	0Ω	220K
V3	5B8	0Ω	•1.3Meg	•†2.7Meg	6.5Ω	6.5Ω	1Meg	56Ω	†170Ω	†170Ω
V4	5B8	0Ω	2.2Meg	†12K	5.5Ω	5Ω	0Ω	180Ω	†170Ω	†170Ω
V5	6AW8A	0Ω	100K	†35K	3.5Ω	5Ω	• 10Ω	1.4Meg	†22Ω	†3300Ω
V6	3DT6	4.2Ω	680Ω	†3.5Ω	3Ω	‡700K	†2200Ω	680K		
V7	12CA5	120Ω	270K	9Ω	7.5Ω	270K	†22Ω	†430Ω		
V8	12L6GTB	TP	10.5Ω	†260Ω	†22Ω	•2.3Meg	TP	9Ω	0Ω	
V9	6SN7GTB	1.8Meg	†12K	1200Ω	•75K	†47K	1200Ω	1.5Ω	3Ω	
V10	12DQ6A	TP	10.5Ω	TP	†200Ω	440K	TP	11.5Ω	0Ω	TOP CAP ‡13Ω
V11	19AU4GT	NC	TP	480K	NC	†22Ω	TP	13Ω	11.5Ω	
V12	1X2B	PINS 1 THRU 9 HAVE INFINITE RESISTANCE								TOP CAP ‡453Ω
V13	14RP4	0Ω	3Ω	Pin 6 ‡27K	Pin 10 ‡27K	Pin 11 •†120K	Pin 12 1.5Ω			

† MEASURED FROM OUTPUT OF M1.
‡ MEASURED FROM PIN 3 OF V11.
• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
NC NO CONNECTION
TP TIE POINT

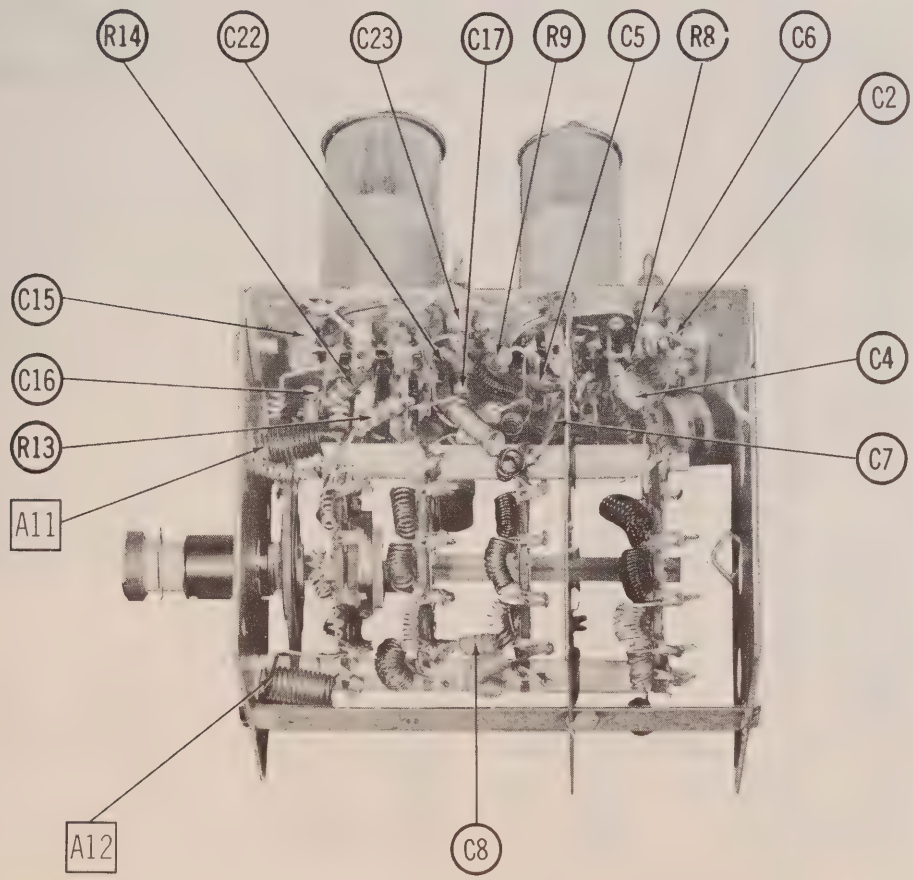


TUBE PLACEMENT CHART



PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

RF TUNER-LEFT SIDE



RF TUNER-RIGHT SIDE

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No	USE	TYPE	NOTES
V1	RF Amp.	3BK5	
V2	Mixer-Osc.	5CL8	
V3	1st Video IF - Vert. Mult.	5U8	
V4	2nd Video IF - Sync Sep.	5U8	
V5	Video Output-Sound IF	6AW8A	
V6	Audio Det.	3DT8	
V7	Audio Output	2CM5	
V8	Vert. Mult. - Vert. Output	12L6GT	
V9	Horiz. Mult.	6SN7GTB	
V10	Horiz. Output	12BA6A	
V11	Damper	6AU4GT	
V12	HV Rectifier	5AZ8	

PICTURE TUBE

ITEM No	REPLACEMENT DATA				NOTES
	CORONADO PART No.	BF PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	
V13	19EP4A		19EP4A ②	19EP4A ②	① Aluminized ② Silver Screen 85

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP	RATING VOLT	REPLACEMENT DATA CORONADO PART No.	AEROVOX PART No.	CORNELL DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	250	150	45A382	PR3-012		WT320	CUB1-015	D-025 MT-1B10	R2294*
B	350	150							
C	10	450							

* Non catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP	RATING VOLT	REPLACEMENT DATA CORONADO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	2.2									
C3	470		47A636	BPD-00047	DD-471	BYA10TA7	ED-470	UC-5847	5GA-T47	
C4	5			BPD-01 5	TCZ-5R	C10Y5C	TCO-5	ET-5547	5TCCB-Y5	
C5	1000		47-808	BPD-001	DD-103	BYA5D1	ED-1000	DC531	5HK-D1	
C6	1000			EF-001	MFT-1000				503C-D1	
C7	47		47CA30A470M	BPD-00047	DD-470	L10Q47	ED-47	UC-5447	5GA-Q47	
C8	1.5			MP0-81.5	TCZ-1R5	C10Y15C	TCO-1.5	ET-5515	5TCCB-Y15	
C9	24									
C10	26									
C11	15			BPD-00015	DD-150	L10Q15	ED-15	UC-5415	5GA-Q15	
C12										
C13	100									
C14	1.5			MP0-81.5.2	TCZ-5.5	C16Y5C	TCO-5			M1000
C15	15									
C16	1.0			MP0-81.0	TCZ-1U	C16Q1C	TCO-1U	ET-541	5TCC-Q1	
C17	1000			EF-001	MFT-1000				503C-D1	
C18	1000		47-808	BPD-001	DD-103	BYA5D1	ED-1000	DC531	5HK-D1	
C19	100									
C20	1300			EF-001	MFT-1000				503C-D1	
C21	1000		47-803	BPD-001	DD-103	BYA5D1	ED-1000	DC531	5HK-D1	
C22	1000		47-803	BPD-901	DD-103	BYA5D1	ED-1000	DC531	5HK-D1	
C23	1000			EF-001	MFT-1000				503C-D1	
C24	330		47A841	BPD-00033	DD-331	C10T33	ED-330	UC-5333	5GA-T33	
C25	470		47A843	BPD-00047	DD-471	BYA10TA7	ED-470	UC-5347	5GA-T47	
C26	1000		47A330	BPD-001	DD-103	BYA5D1	ED-1000	DC531	5HK-D1	
C27	4.7		47B403-6	MP0-81 4.7	TCZ-4R7	C10Y4.7C	TCO-4.7	ET-558	5TCCB-V47	
C28	.01		47CA30A100K	MP	DE-100	LT8Q	GP-10	UC-5841	5GA-Q47	
C29	.1	180		PS88M-1	DF-104	CUB2P1		GEM-301	2TM-P1	Note 1 NTS
C30	68		47-625							
C31	1.0	200	6SD616-104M3	PS88M-1	DF-104	CUB2P1		GEM-201	2TM-P1	
C32	1000	100	47A330	BPD-001	DD-103	BYA5D1	ED-1000	DC531	5HK-D1	
C33	.22	100	6SD616-224M1	PS88M-33		CUB1P33		GEM-3033	2TM-P22	
C34	10		47A180-11	SI 10	DS-100	LT8Q1	GP-10	UC-541	5GA-Q1	
C35	12		47-624							NTS
C36	47		47CA30A470M	SI 47	DS-470	LT8Q47	GP-47	UC-5447	5GA-Q47	
C37	3		47A807	SI 3	DS-030	LT6Y3	TCO-3	ET-553		
C38	10000		47A834	BPD-01	DD-103	BYA5D1	ED-01	DC531	5HK-S1	
C39	1000		47A330	BPD-001	DD-103	BYA5D1	ED-1000	DC531	5HK-D1	
C40	1000		47A330	BPD-001	DD-103	BYA5D1	ED-1000	DC531	5HK-D1	
C41	1000		47A330	BPD-001	DD-103	BYA5D1	ED-1000	DC531	5HK-D1	
C42	.5		47D480							M1000
C43	.047	300	6SD616-473M3	BPD-05	DF-503	CUB3S47		GEM-3147	3TM-S47	
C44	.0000		47A234	BPD-01	DD-103	BYA5S1	ED-01	DC531	5HK-S1	
C45	.0001		47A234	BPD-01	DD-103	BYA5S1	ED-01	DC531	5HK-S1	
C46	820		47-806	BPD-0009	DE-821	L10T82	ED-820		5GA-T82	
C47	2000		47A396	BPD-002	DD-203	BYA10Z2	ED-003	DC532	5GA-Z2	
C48	.082	300								
C49	.033	300		PS88M-033	DF-303	CUB2S33		GEM-4133	4TM-S33	
C50	.0000	1000	47-805	PS88M-01	DD-103	BYA10S1M			10HK-S1	
C51	1000		47-803	BPD-001	DD-103	BYA5D1	ED-001	DC531	5HK-D1	
C52	.0039	100	6SB3392E4	BPD-004	DD-402	CUB2D39	GP-4000	GEM-434	6TM-D4	
C53	100		47CA2A101M	SI 100	DS-101	LT8T1	GP-100	UC-531	5GA-T1	
C54	47		47CA30A470M	SI 47	DS-470	LT8Q47	GP-47	UC-5447	5GA-Q47	
C55	1000		47A396	BPD-001	DD-102	BYA5D1	ED-1000	DC531	5HK-D1	
C56	.0047	300	6SD616-473K3	BPD-0047	DE-472	CUB2D47	GP-4700	GEM-4347	6TM-D47	
C57	1000		47A586	BPD-001	DD-102	BYA5D1	ED-1000	DC531	5HK-D1	
C58	.1	300	6SD616-104M3	PS88M-1	DF-104	CUB2P1		GEM-301	2TM-P1	
C59	.0056	600	6SB15E2E4	P4SM-005	D6-562	CUB4D2	GP-5600	GEM-436	6TM-D5	
C60	330		47A2G33K	1464-00033		5WT33			M5-333	
C61	68		47A2G68K	1464-00068		5WT68			M5-347	
C62	470		47A838	BPD-00047	DD-471	BYA10TA7	ED-470	UC-5347	5GA-T47	
C63	.15	600	6SD616-154M6	P6SM-15		CUB6P15		GEM-5015	5TM-P15	
C64	120	3000	47-640		DD30-121	BYB0T12			30GA-T12	
C65	56	3000	47A627		DD30-56	BYA30Q56	HD3-56	DC30558	30GA-Q56	
C66	.22	600		P6SM-23		CUB6P23		GEM-6023	6TM-P23	
C67	1000		47A330	BPD-001	DD-103	BYA5D1	ED-1000	DC531	5HK-D1	
C68	10000		47A234	BPD-01	DD-103	BYA5S1	ED-01	DC531	5HK-S1	
C69	.22	300	6SD616-224M3	PS88M-33		CUB3P33		GEM-3033	3TM-P22	
C70	.22	600	6SD616-224M6	P6SM-33		CUB6P33		GEM-6033	6TM-P22	
C71	.1	300	6SD616-104M3	PS88M-1	DF-104	CUB3P1		GEM-301	2TM-P1	

Note 1: Some versions may use an 82K (part #23X10X223X), an 82K paralleled by 150K, or a 68K (part #23X10X683X) in this application.

PARTS LIST AND DESCRIPTIONS

CONTROLS

ITEM No	RATING RESIST ANCE	RATING WATTS	REPLACEMENT DATA CORONADO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	3.5K		25B2400	B-50	A47-50K, 2	Q53-32	TA33AA	Volume
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
C	Switch			Not Req.		Not Req.	US-28	
R2A	150000		25B3599	B-5M	SWE 12	Q57-409	L-5	Contrast
B	Shaft			Not Req.		Not Req.	Not Req.	
R3A	5Meg		25B4001	B-5M		Q57-141	TA50B	Brightness
B	Shaft			Not Req.		Not Req.	Not Req.	
R4A	2.5Meg		25B3402	B-T42	A47-1.5Meg	Q51-38	U35	Vert. Hold
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
R5A	75K		25-1305	B-25	A47-75K	Q51-125	PTA1SL	Horiz Hold
B	Shaft			Not Req.	FKS-1-2	Not Req.	Not Req.	
R6A	2Meg		25B3398					Vert. Linearity
B	5Meg							Height With 1Meg Stop

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No	RATING OHMS	RATING WATT	REPLACEMENT DATA CORONADO PART No	IRC PART No	NOTES
R7	220K		23X2+2X224K	BTS-220K	
R8	12K		23X2eX123K	BTS-12K	
R9	47001		23X3X475K	BTS-4700	
R10	47001		23X3X475K	BTS-4700	
R11	330K		23X3X334K	BTS-330K	
R12	22001		23X3X222K	BTS-2200	
R13	47001		23X3X475K	BTS-4700	
R14	15K		23X2X153K	BTS-15K	
R15	3301		23X3X331K	BTS-330	
R16	1Meg		23X3X105K	BTS-1Meg	
R17	10K		23X2X103K	BTS-10K	
R18	1501		23X3X151K	BTS-150	
R19	561		23X2X560K	BTS-56	
R20	1001		23X3X101K	BTS-100	
R21	1801		23X2X181K	BTS-180	
R22	68001		23X3X682K	BTS-6800	
R23	2.7Meg		23X3X275K	BTS-2.7Meg	
R24	3.3Meg		23X3X335K	BTS-3.3Meg	
R25	3500Ω	T	34A1E3	PW7-3500	
R26	27K		23X3X273K	BTS-27K	
R27	120K		23X3X124K	BTS-120K	
R28	100K		23X3X104K	BTS-100K	
R29	33K		23X3X335K	BTS-33K	
R30	680K		23X3X684K	BTS-680K	
R31	270K		23X3X274K	BTS-270K	
R32	680K		23X3X684K	BTS-680K	
R33	6801		23X2X681K	BTS-680	
R34	22001		23X3X222K	BTS-2200	
R35	1801K		23X3X181K	BTS-180	
R36	27K	1	23X3X273K	BTA-27K	
R37	1501		23X2X151K	BTS-150	

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA CORONADO PART No.	IRC PART No.	NOTES
R38	15K		23X2X153K	BTS-15K	
R39	12K	1	23X3X123K	BTA-12K	
R40	18K	1	23X3X183K	BTA-18K	
R41	68K		23X3X683K	BTS-68K	
R42	100K		23X3X104K	BTS-100K	
R43	470K		23X3X474K	BTS-470K	
R44	180K		23X3X184K	BTS-180K	
R45	100K		23X3X104K	BTS-100K	
R46	100K		23X3X104K	BTS-100K	
R47	100K		23X3X104K	BTS-100K	
R48	1.5Meg		23X3X155K	BTS-1.5Meg	
R49	1001		23X3X101K		
R50	1801		23X2X181K		
R51	220K		23X3X224K	BTS-220K	
R52	1Meg		23X3X105K	BTS-1Meg	
R53	4700Ω		23X3X472K	BTS-4700	
R54	1Meg		23X3X105K	BTS-1Meg	
R55	1Meg		23X3X105K	BTS-1Meg	
R56	33K		23X3X333K	BTS-33K	
R57	13K		23X3X133K	BTS-13K	
R58	56K		23X3X563K	BTS-56K	
R59	47K		23X3X473K	BTS-47K	
R60	390K		23X3X394K	BTS-390K	
R61	12001 5%		23X3X122J	BTS-1200 5%	
R62	3300Ω		23X3X332K	BTS-3300	
R63	390K		23X3X394K	BTS-390K	
R64	47K		23X3X473K	BTS-47K	
R65	1001		23X3X101K	BTS-100	
R66	6800Ω		23X3X682K	BTS-6800	
R67	351	10	24-1086	1 3/4-6-35	
R68	4.7Ω	5	24B105		

Note 1: Some versions may use an 82K (part #23X10X223X), an 82K paralleled by 150K, or a 68K (part #23X10X683X) in this application.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA CORONADO PART No.	Hollodyne PART No.	Merit PART No.	RCA TYPE No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	Horiz. Output Trans.	55-204							
T2	Vert. Output Trans.	55-209	21900 ①					38H75 ②	
T3	Yoke(90°) Horiz(24.5MH 55-208 Vert(11.5MH)								

① Connect #1 to plate; #2 to B+ ; #7 to yoke terminal #4; #10 to yoke terminal #6.
② Connect #1 to plate; #2 to B+ ; #7 to yoke terminal #6; #10 to yoke terminal #4.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA CORONADO PART No.	Hollodyne PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T4	4900Ω	3-4Ω	55C306	21107 ①	A-3026	A-3277 ①	24S51 ①	S-5X	① Drill one new mtg. hole.

SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA CORONADO PART No.	GUAM PART No.	NOTES
SP1	4"	PM	3-4Ω	85C175	4A07	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA CORONADO PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L1	1st Video IF	51-2167				
L2	2nd Video IF	51-2188				
L3	3rd Video IF	95-888				
L4	RF Choke	53A507	19-1006		4854	18 Microhenries
L5	Shunt Peaking Coil	51-2021	19-3980		6143	710 Microhenries
L6A	4.5MC Trap	51B1996				
B	1st Sound IF					
L7	Shunt Peaking Coil	51-2101	19-6400a		6134a	396 Microhenries; Wound on 3900Ω resistor.
L8	Series Peaking Coil	51-2194	19-3180 *		6130 *	180 Microhenries, wound on 27K resistor
L9	2nd Sound IF	51-2166				
L10	Quadrature Coil	51B1867			1480	
L11	RF Choke	53-343				7.5 Microhenries; IRC part #CLA

* Parallel with 3900Ω resistor
* Parallel with 27K resistor.

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES PRI.	DC RES SEC.	REPLACEMENT DATA CORONADO PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	BCA TYPE No.	Ram PART No.	Thordarson PART No.	NOTES
L12			51-2189	19-1575		6200 ①			H3-4	

① Enlarge mounting hole. A 3900MMF capacitor may have to be used in place of .0056 (C58).

FILTER CHOKE

ITEM No	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE @ CURRENT (1000 ⁰/₀)	REPLACEMENT DATA CORONADO PART No.	Hallodyne PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L13	280A	22Ω	.5HY	55A353	C5041 ①	C-2296 ①	C-2325 ①	26C44 L	C-23X 1

① Drill one new mtg. hole.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	CORONADO PART No.	REPLACEMENT DATA	
K1	Sync Coupler	270MMF, 25MMF, 10000MMF, 250K, 2.2Meg	48A048	Aerovox Centralab Sprague	PA-533 PC-383 ST-3

RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA CORONADO PART No.	FEDERAL PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL PART No.	MALLORY PART No.	RADIO RECEPTOR PART No.	SARKES TARZIAN PART No.
M1	.32DA	27C226 ①	1023A ①	1N1007 ③	R3250SL ①	85250 ①	6QA3 ①	350A ①
M2		27C226 ①	1215 ① ③		FT1 ① ③			

① Selenium type.
② Germanium type.
③ 2 required.

CRYSTAL DIODES

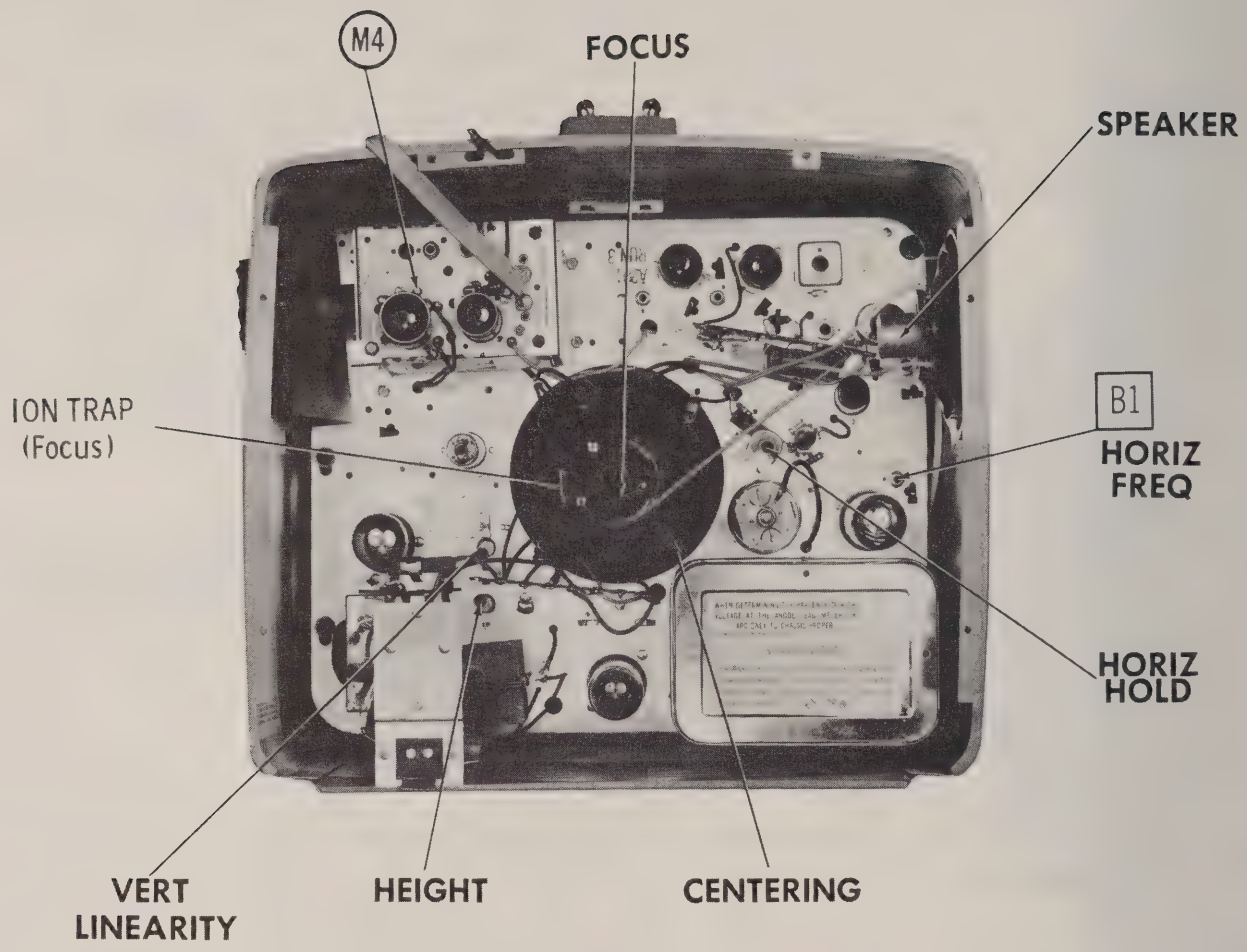
ITEM No.	ORIG TYPE	REPLACEMENT DATA CORONADO PART No.	SYLVANIA PART No.	NOTES
M3	IN60*	18C1080	1N60	Video Detector (Pigtail)

* A CK-706A or 1N295 may be used in this application

MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
M4	Tuner	1-3087	VHF
M5	Centering Device	21B318	
M6	Ion Trap	21B188	
	Safety Glass	23D124	
	Knob	18B1055	Control, 4 Used
	Knob	18C1038	Fine Tuning
	Knob	18A1040	Channel Selector

CORONADO
MODEL TV3-9397A



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

HORIZONTAL OSCILLATOR ADJUSTMENTS

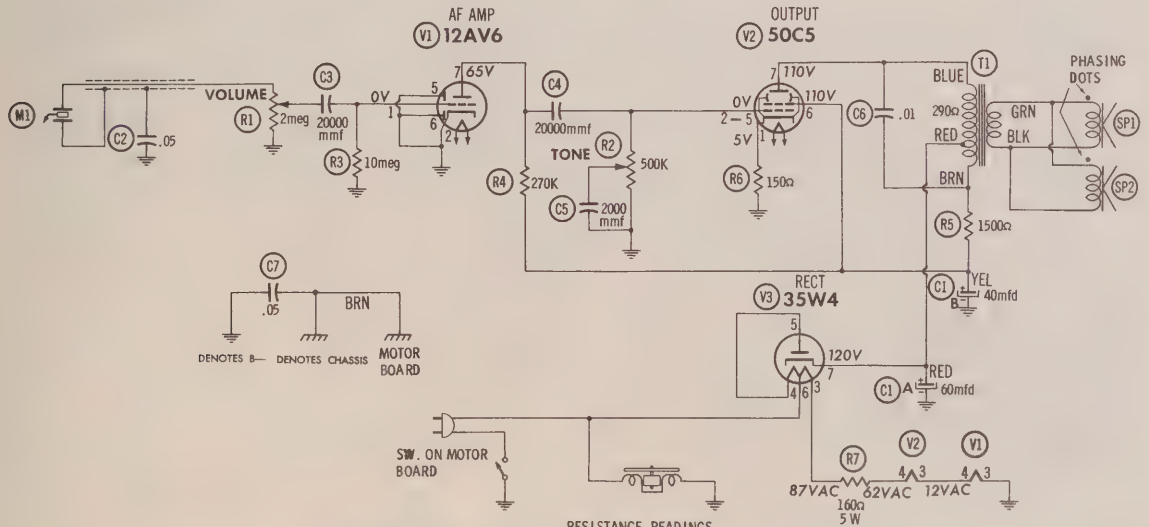
1. Turn the set on and tune in a TV station, preferably with a test pattern.
2. Set the horizontal hold control to its mid-range position and adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.
3. Check other stations and if necessary, retouch B1 for best sync action on all channels.

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

CRESCENT
MODEL A-642

TRADE NAME	Crescent Model A-642
MANUFACTURER	Crescent Industries Inc., 5900 W. Touhy Ave., Chicago 31, Ill.
TYPE SET	AC Operated Phono Amplifier With 3 Speed Automatic Record Changer
TUBES (Three)	Types 12AV6 AF Amplifier, 50C5 Output, 35W4 Rectifier
POWER SUPPLY	105-125 Volts AC - 60 Cycles RATING .25 Amp. @ 117 Volts AC

FOR SERVICE INFORMATION ON RECORD CHANGER - SEE CRESCENT 500 SERIES - PHOTOFACT SET 197 FOLDER 4 OR RECORD CHANGER MANUAL CM-5.



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12AV6	10Meg	0Ω	0Ω	12Ω	0Ω	0Ω	† 270K
V2	50C5	150Ω	500K	12Ω	62Ω	500K	† 1500Ω	† 290Ω
V3	35W4	NC	NC	225Ω	260Ω	260Ω	250Ω	12K

† MEASURED FROM PIN 7 OF V3.
NC NO CONNECTION

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	AF Amplifier	12AV6	
V2	Output	50C5	
V3	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	CRESCENT PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	60	150	770113	PRS150V5050	BBRT44215	TCT3116	TDLT-4	FMD-1550	TVA-2453
B	40	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	CRESCENT PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	.05	200		BPD-05	DF-503	CUB2S5		PT415	2TM-S5	
C3	20000			BPD-02	DD-203	K085	ED-02	PT412	5HK-S2	
C4	20000			BPD-02	DD-203	K085	ED-02	PT412	5HK-S2	
C5	2000			BPD-002	DD-202	K072	ED-002	DC522	5HK-D2	
C6	.01	600		BPD-01	D6-103	CUB6S1	GP-10000	PT611	6TM-S5	
C7	.05	200		BPD-05	DF-503	CUB2S5		PT415	2TM-S5	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	CRESCENT PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	2Meg	$\frac{1}{2}$	740070					Volume & Sw.
R2	500K	$\frac{1}{2}$	740067					Tone

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	CRESCENT PART No.	IRC PART No.	
R3	10Meg			BTS-10Meg	
R4	270K			BTS-270K	
R5	1500Ω			BTS-1500	
R6	150Ω			BTS-150	
R7	160Ω	5		PW7-150	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	CRESCENT PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2600Ω	1.6Ω	700067	Z1102 ①	A-3031 ①	A-3336 ①	24S50A ①	S-16X ①	① Drill one new mounting hole.

SPEAKER

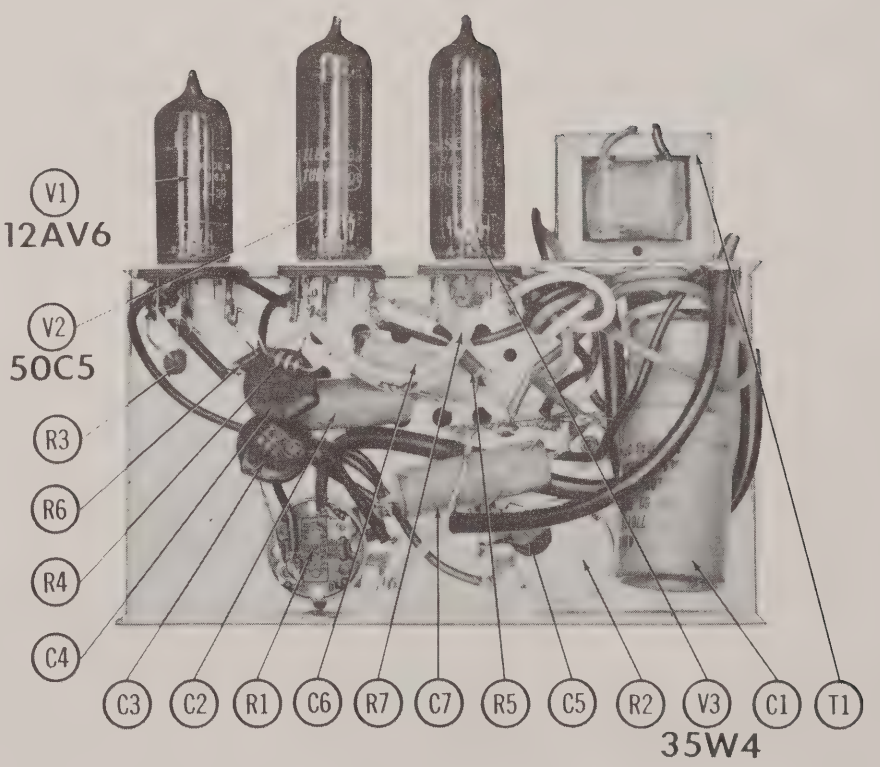
ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	CRESCENT PART No.	QUAM PART No.	
SP1	5"	PM	3-4Ω	011848	5A07	
SP2	5"	PM	3-4Ω	011848	5A07	

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA					REMARKS
	CRESCENT PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	MOUNT	
M1	720044	55-T	GD-J	56	PT-2	

ASTATIC NEEDLE LISTING SHOWN ABOVE IS SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGE LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENT SEE BELOW.

CHASSIS—BOTTOM VIEW



PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	CRESCENT PART No.	JENSEN PART No.	WALCO PART No.	
M2	720055	†S-66 or ♦†S-66SD or ♦S-66D	†W-75TPS or ♦†W-75DS or ♦W-75TPD	† Jewel ♦ Diamond

MISCELLANEOUS

ITEM No.	PART NAME	CRESCENT PART No.	NOTES
	Knob	310330	Motor Speed Control
	Knob	310373	Reject
	Knob	310326	On-Off-Volume & Tone

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

FIRESTONE MODEL
4-C-32 (Code 1-6-5PL)

FIRESTONE MODEL
4-C-32 (Code 1-6-5PL)

TRADE NAME	Firestone Model 4-C-32 (Code 1-6-5PL)
SUPPLIER	Firestone Tire & Rubber Co., 1200 Firestone Parkway, Akron, Ohio
TYPE SET	Three Power Portable AM Receiver
TUBES (Four)	Types 1R5 Converter, 1U4 IF Amplifier, 1U5 Det-AVC-AF Amp., 3V4 Output
POWER SUPPLY	105-125 Volts AC-DC (or) 7.5 Volts "A" Supply & 67.5 Volts "B" Supply
RATING	.15 Amp. @ 117 Volts AC (or) 65MA @ 7.5 Volts DC & 6.5MA @ 67.5 Volts DC
TUNING RANGE—BROADCAST	535KC - 1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Use battery power, if possible. If AC power is used, use an isolation transformer when available. If not, connect a .1MFD capacitor in series with low side of the signal generator and B-.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 6 (grid) of 1R5 (V1). Low side to B-.	455KC (400~ Mod)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If AC power is used without an isolation transformer, reduce dummy antenna to 200MMF to reduce hum modulation.
2.	.1MFD	High side to pin 6 (grid) of 1R5 (V1). Low side to B-.	1620KC	"	"	A5	"
3.		Loop	1400KC	Tune to 1400KC signal.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

FIRESTONE
MODEL 4-C-32

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Converter	1R5	
V2	IF Amplifier	1U4	
V3	Det-AVC-AF Amp.	1U5	
V4	Output	3V4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA FIRESTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	60	150	583016	PRS150/25V	BBRT84215	WT240		D-080	TVL-3431. 4
B	60	150		4040/100	BRH251			MT-02100	
C	100	25							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA FIRESTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	.05	200		BPD-05	DF-503	CUB2S5		GEM-415	2TM-S5
C3	1.5			NP0-Sil. 5	TCZ-1R5	TZ04	TCO-1.5	ZT-5515	5TCCB-V15
C4	10000			BPD-01	DD-103	K082	ED-01	DC511	5HK-S1
C5	2.7		515002						
C6	220			DI-00022	DD-221	G051	ED-220	UC-5322	5GA-T22
C7	2000			BPD-002	DD-202	K072	ED-002	DC522	5HK-D2
C8	10000			BPD-01	DD-103	K082	ED-01	DC511	5HK-S1
C9	.1	200		P288N-1	DF-104	CUB2P1		GEM-201	2TM-P1
C10	.047	400		BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA FIRESTONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1	1Meg	½	368001					Volume

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

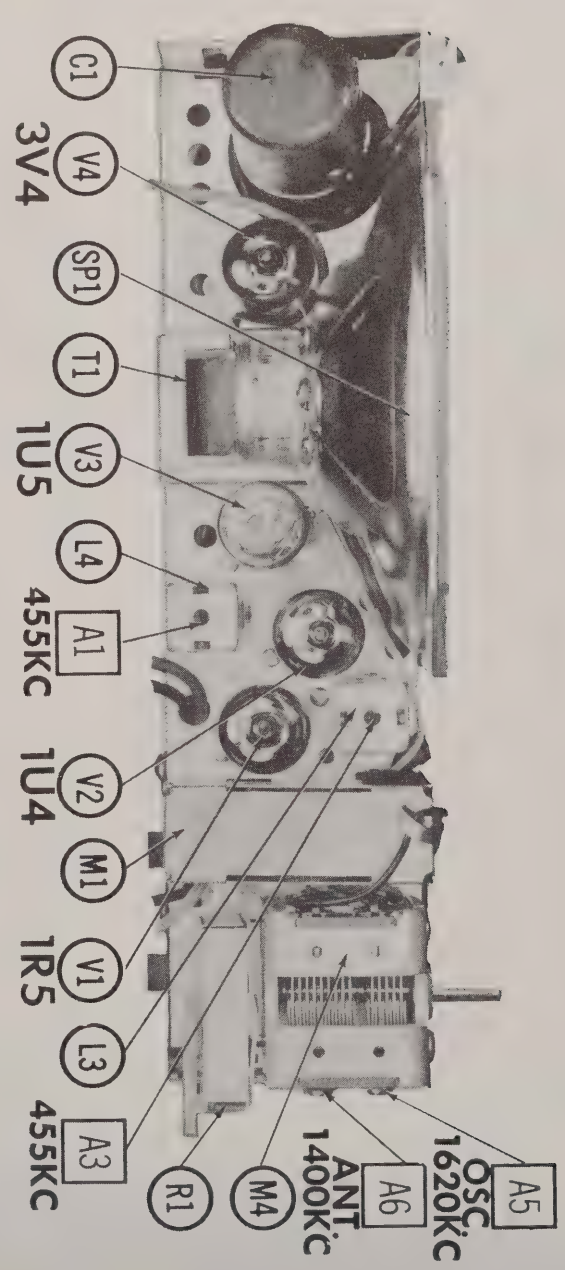
ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA FIRESTONE PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R2	100K			BTS-100K	
R3	15K			BTS-15K	
R4	680Ω			BTS-680	
R5	3.3Meg			BTS-3.3Meg	

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA FIRESTONE PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R6	47K		510003	BTS-47K	
R7	150Ω			BTS-150	
R8A	750Ω	5			
B	1500Ω	5			
R9	37Ω	2			

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA FIRESTONE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	8900Ω	3-4Ω	430080		A-2927 ①				① Bend ears under.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	FIRESTONE PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	404002	4A07	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		FIRESTONE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Stick	464019				
L2	Osc. Coil	455046	14-1073			
L3	Input IF	459016	16-6800	BC-358	10-C1	
L4	Ouput IF	459016	16-6801	BC-359	10-C2	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	FIRESTONE PART No.	REPLACEMENT DATA	
K1	IF Grid Filter	10Meg, 1000MMF	420001	Aerovox	PA647
K2	Detector-Audio Net.	4. 7Meg, 1Meg, 3. 3Meg, 10Meg, 2000MMF, 10000MMF, 150MMF, 150MMF, 5000MMF	420007	Aerovox Centralab Sprague	PA521 PC-165 DP-1

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA						NOTES
	CURRENT	FIRESTONE PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	MALLORY PART No.	RADIO RECEPTOR PART No.	SARKES TARZIAN PART No.	
M1	.060A	380001	1386	RS065Q	6S65	8J1	65	

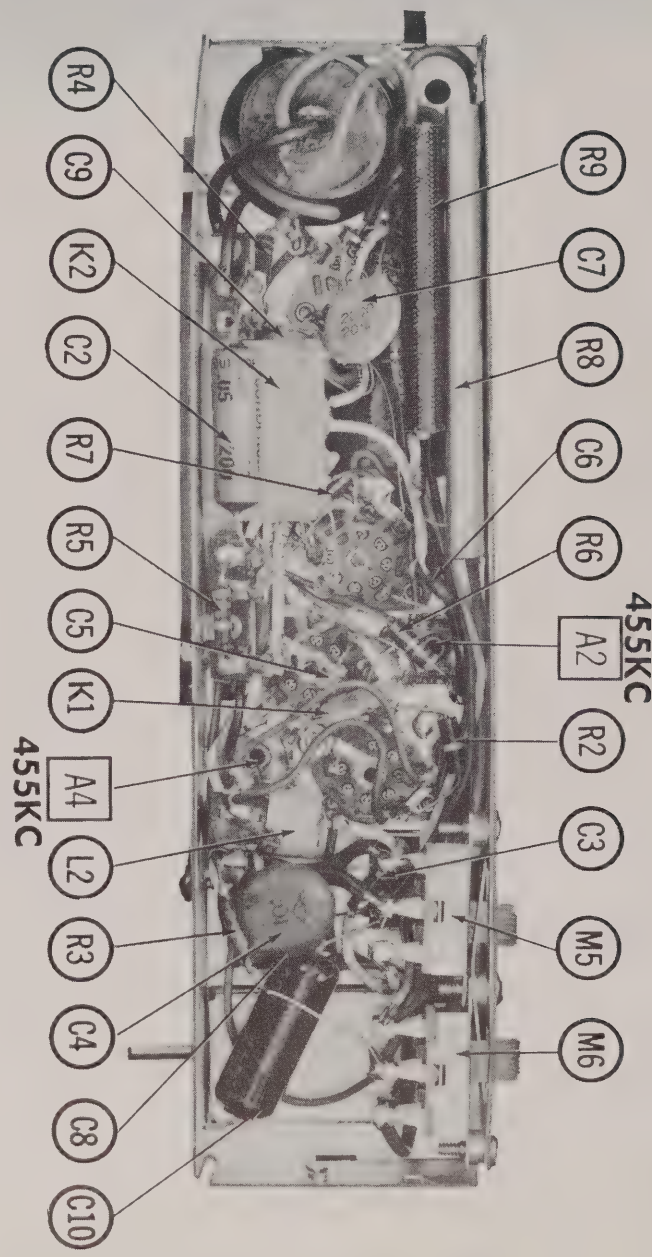
BATTERIES

ITEM No.	VOLTAGE	FIRESTONE PART No.	REPLACEMENT DATA								
			BURGESS			EVEREADY			MALLORY		
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	"A"	"B"	"A-B"
M2	7½V "A"	4-D-136	C5			717			M-9		
M3	67½V "B"	4-D-135		P45			477			M-211P	

MISCELLANEOUS

ITEM No.	PART NAME	FIRESTONE PART No.	NOTES
M4	Tuning Cap.	590027	2 Gang (10-235MMF, 15-115MMF)
M5	Switch	370025	Power Selector (DPDT, Slide Type)
M6	Switch	370025	Power Selector (DPDT, Slide Type)
	Knob	270500	Tuning
	Knob	271901	Volume
	Case	200016	British Tan

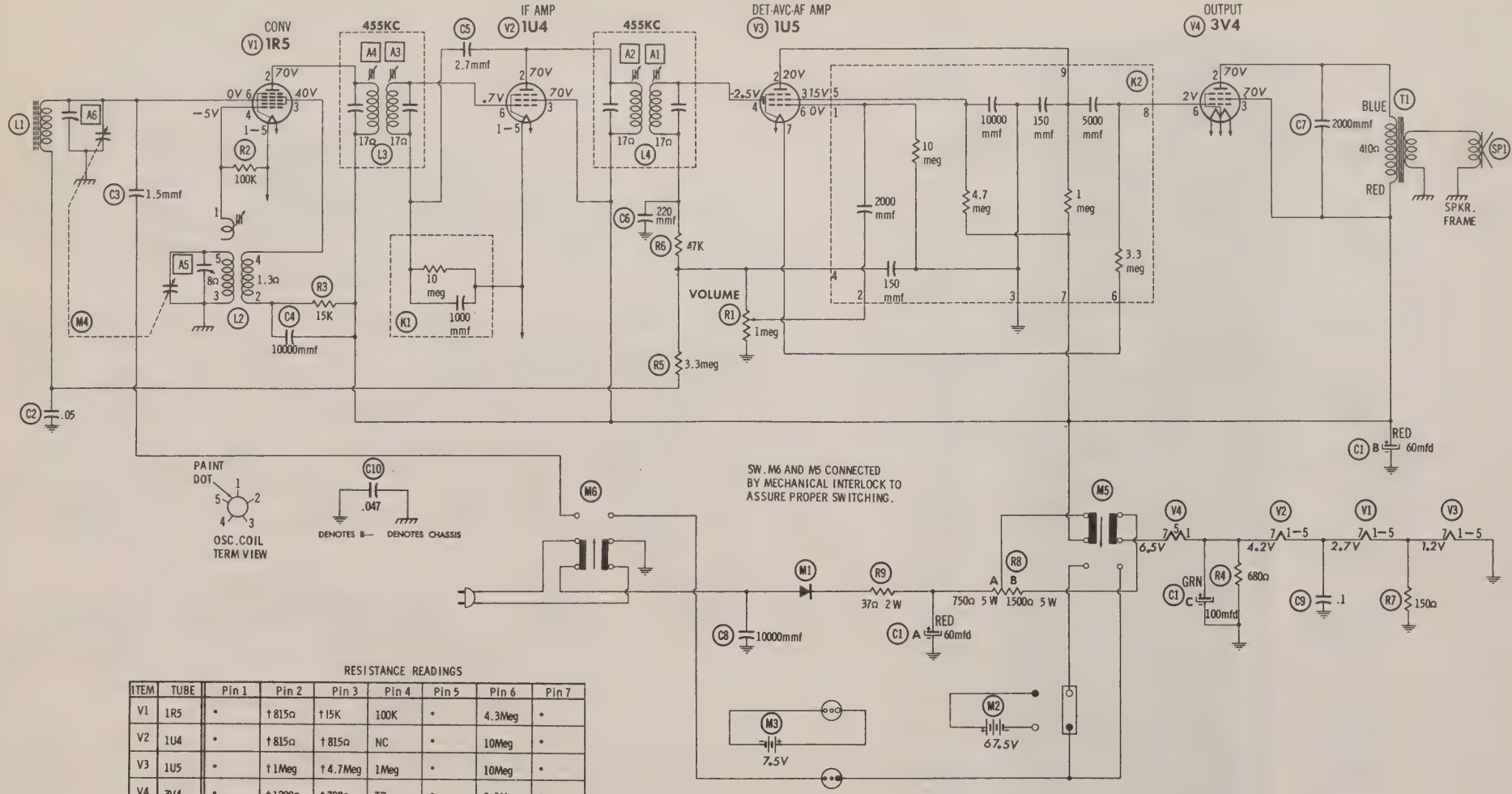
CHASSIS—BOTTOM VIEW



SET 359 FOLDER 6

FIRESTONE MODEL 4-C-32

FIRESTONE MODEL 4-C-32



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	1R5	•	†815Ω	†15K	100K	•	4.3Meg	•
V2	1U4	•	†815Ω	†815Ω	NC	•	10Meg	•
V3	1U5	•	†1Meg	†4.7Meg	1Meg	•	10Meg	•
V4	3V4	•	†1200Ω	†790Ω	TP	•	3.3Meg	•

• DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.
† MEASURED FROM OUTPUT OF M1.
NC NO CONNECTION.
TP TIE POINT.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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GENERAL ELECTRIC MODELS 9T001, 9T002 ("T" Line)

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GENERAL ELECTRIC MODELS 9T001, 9T002 ("T" Line)

GENERAL ELECTRIC MODEL 9T001 (CH. "T" LINE)

TRADE NAME	General Electric Models 9T001, 9T002 (Ch. "T" Line)
MANUFACTURER	General Electric Co., Appliance and Television Receiver Div., Louisville, Ky.
TYPE SET	Television Receiver
TUBES	Thirteen
POWER SUPPLY	110-125 Volts AC, 60 Cycles RATING 67 Watts; .75 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

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Disassembly Instructions 1
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DISASSEMBLY INSTRUCTIONS

CHASSIS & PICTURE TUBE REMOVAL

1. Remove 5 push-on type control knobs from the top.
2. Remove 8 chassis bolts from the bottom. (Three on each side, two at rear).
3. Remove chassis from the front of the cabinet.
4. Remove picture tube socket, Ion trap and centering device.
5. Loosen the yoke clamp by loosening the wing nut.
6. Remove the screw from the bottom mounting board retaining the cabinet front locking slide. This screw is located on the inside at the bottom left side of the front.
7. Move the slide to the left allowing the cabinet front mounting studs to drop through the holes in the front of the chassis mounting board.
8. The cabinet front and picture tube assembly may then be removed from the main chassis by passing the neck of the tube forward out of the yoke.
9. Remove the 4 springs from the tube clamping ring around the bell of the tube.
10. The tube is now free of the cabinet front and face glass for service or cleaning.

NOTE: Always use water and mild soap for cleaning the safety glass.

MODELS	CHASSIS
9T001, 9T002	"T" Line

CAUTION NOTE

ONE SIDE OF AC LINE CONNECTED TO CHASSIS

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF oscillator is possible by removing the channel selector and fine tuning knobs. Set the fine tuning at the center of its range. The adjustments (located in a circle around the shaft) should be made in sequence from the highest to the lowest channel in the area. Channel 13 adjustment is located at 1 o'clock, proceed in a counter clockwise direction adjusting for best picture and sound.

PICTURE TUBE SAFETY GLASS CLEANING

To clean the picture tube and safety glass it is necessary to remove the chassis and the picture tube. (See disassembly instructions.)

FOCUS

Adjust the Ion trap for the best focus consistent with maximum brightness.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Set the horizontal hold to the center of its range. Adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (A7) located on top of chassis.

FUSES

One fuse is used for LV power supply protection. (For location see tube placement chart.)

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube. Rotate the two rings around the neck of the tube until the picture is properly centered.

GENERAL ELECTRIC MODELS
9T001, 9T002 ("T" Line)

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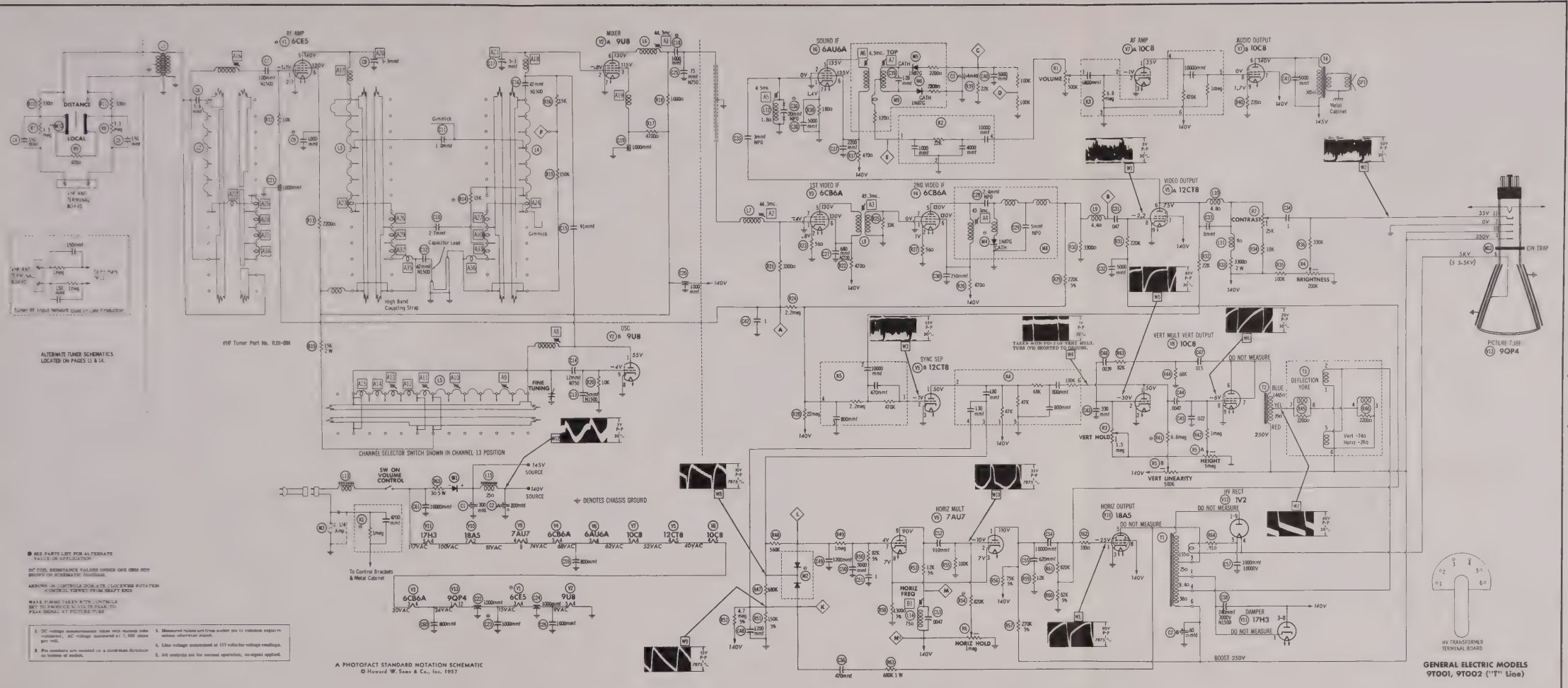
RF AMP V1 6CE5
MIXER V2 A 9U8
OSC V2 B 9U8
SOUND IF V6 6AU6A
AF AMP V7 A 10C8
AUDIO OUTPUT V7 B 10C8
1ST VIDEO IF V3 6CB6A
2ND VIDEO IF V4 6CB6A
VIDEO OUTPUT V5 A 12CT8
SYNC SEP V5 B 12CT8
VERT MULT VERT OUTPUT V8 10C8
HORIZ MULT V9 7AU7
HORIZ OUTPUT V10 18AS
HV RECT V12 TV2
PICTURE TUBE V13 9QP4
DISTANCE
LOCAL
VHF ANT. TERMINAL BOARD
Gimmick
Capacitor Lead
High Band Coupling Strap
VHF Tuner Part No. R.DX-084
FINE TUNING
CHANNEL SELECTOR SWITCH SHOWN IN CHANNEL 13 POSITION
VOLUME
CONTRAST
BRIGHTNESS
VERT HOLD
HEIGHT
VERT LINEARITY
HORIZ FREQ
HORIZ HOLD
DEFLECTION YOKE
ION TRAP
DAMPER V11 17H3
BOOST 250V
SW ON VOLUME CONTROL
To Control Brackets & Metal Cabinet
DENOTES CHASSIS GROUND
DO NOT MEASURE
ALTERNATE TUNER SCHEMATICS LOCATED ON PAGES 11 & 14.
Tuner RF Input Network Used in Late Production
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION
CONTROL VIEWED FROM SHAFT END
WAVE FORMS TAKEN WITH CONTROLS SET TO PRODUCE SYNC TIPS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE
1. DC voltage measurements taken with vacuum tube voltmeter, AC voltage measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction as bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation; no signal applied.
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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GENERAL ELECTRIC MODELS 9T001, 9T002 ("T" Line)

GENERAL ELECTRIC MODELS 9T001, 9T002 ("T" Line)

TUBE PLACEMENT CHART

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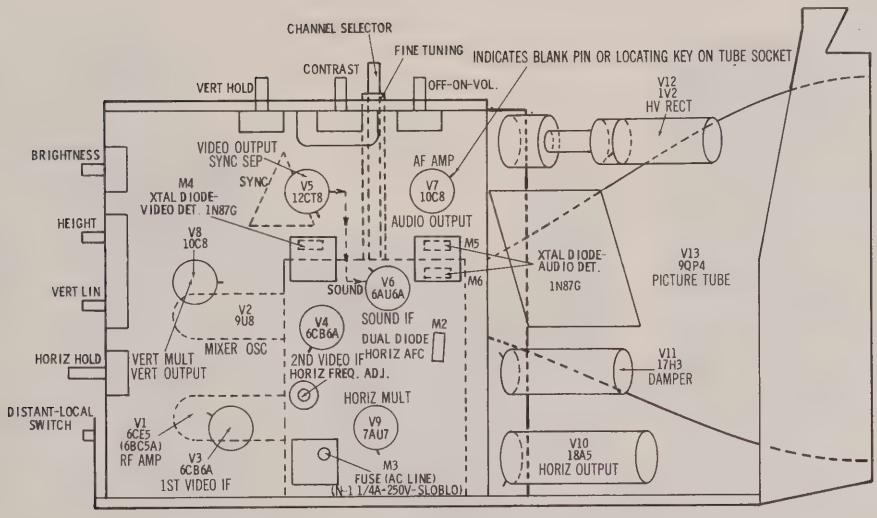


TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

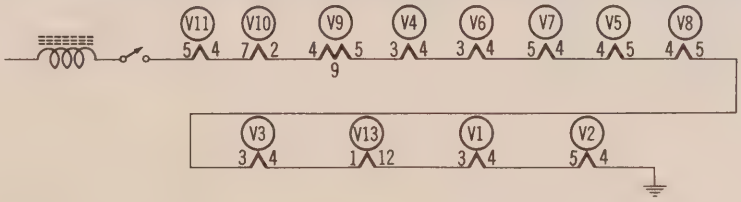
POWER SUPPLY FAILURE
No raster, no sound - Fuse (M3), Rectifier (M1)

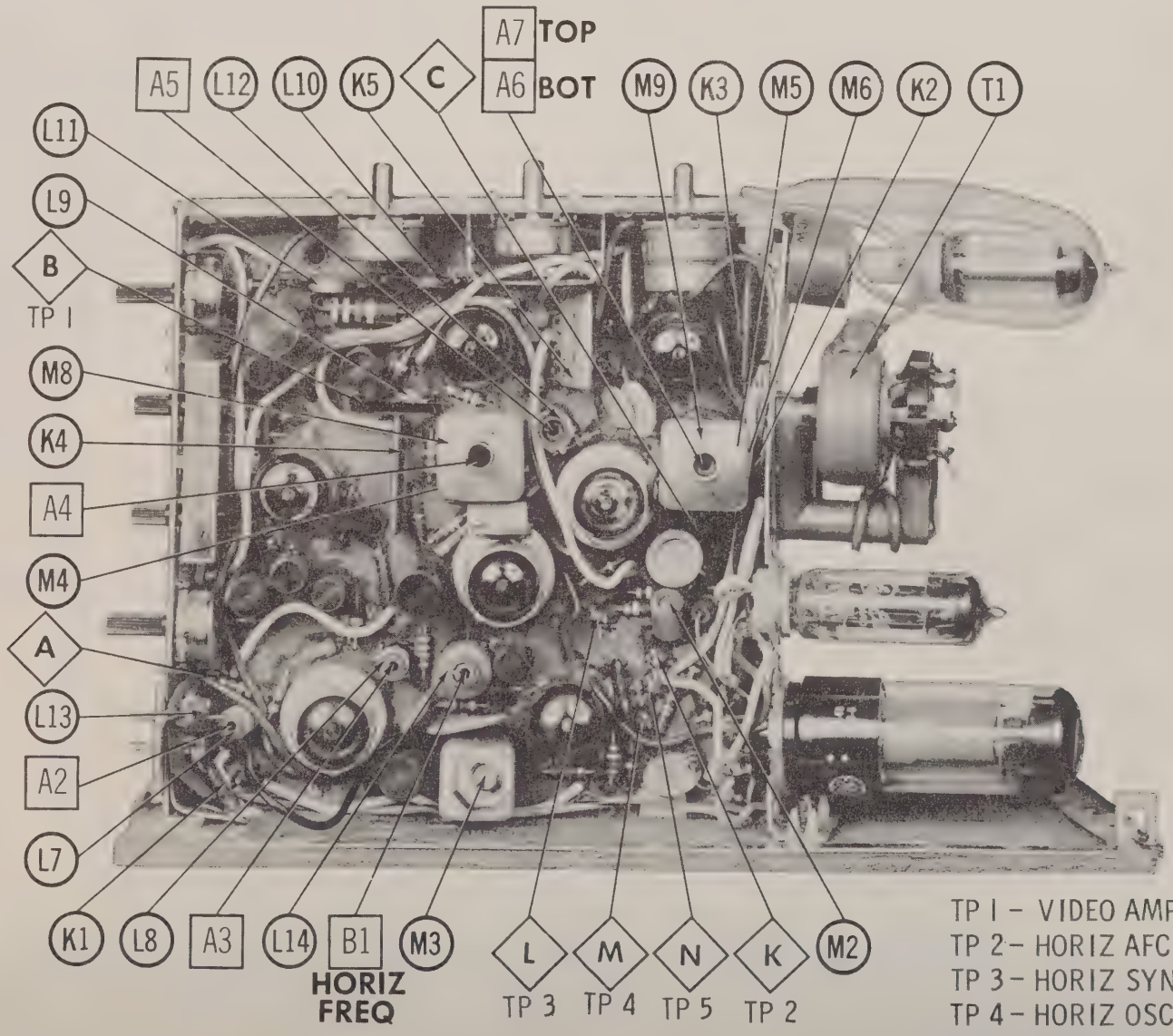
LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V3, V4, Diode (M4), V5
No pic, no sound, has snow - V1, V2
No pic, has sound, has raster - V5, V13
Has pic, no sound - V6, V7

SYNC FAILURE
No vert. sync - V5
No horiz. sync - V5, Diode (M2)
No vert. or horiz. sync - V5

SWEEP FAILURE
No raster, has sound - V9, V10, V11, V12, V13
No vertical deflection - V8
Poor vert. linearity or foldover - V8
Poor horiz. linearity or foldover - V9, V10, V11
Narrow picture - V9, V10, V11, M1
Vert. off freq. - V8
Horiz. off freq. - V9

This receiver employs tubes used in a series filament network, an open filament in any tube in the series will cause the set to be inoperative. (See circuit below.)





TP 1 – VIDEO AMP – 0V
TP 2 – HORIZ AFC – 3.6V
TP 3 – HORIZ SYNC – 4.5V
TP 4 – HORIZ OSC – 120V
TP 5 – HORIZ OSC – 140V

CHASSIS TOP VIEW

CAPACITOR IDENTIFICATION

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ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS--READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT.
Allow a 30 minute warm-up period for the receiver and test equipment.

VIDEO IF ALIGNMENT

Turn volume control fully counter clockwise and contrast control fully clockwise. Turn fine tuning fully counter clockwise.
Connect the negative lead of a 3 volt bias supply to point Ⓐ. Positive to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield (Testing over mixer-osc. tube, V3). Low side to chassis. Use very short shielded leads.	Not used.	44.3MC (unmod)	11	USE VTVM DC probe to point Ⓜ thru 10K. Common to chassis.	A1	Use only enough generator output to provide usable indication on VTVM.
2.	"	"	"	44.3MC	"	"	A3	"
3.	"	"	"	45.3MC	"	"	A3	"
4.	"	"	"	43.3MC	"	"	A4	"
5.	"	"	44.3MC (30MC Swp)	41.25MC 43.05MC 44.3MC 45.0MC 45.75MC	"	Vert. amp thru 22K to point Ⓜ. Low side to chassis.	A1, A2, A3, A4	Adjust A1 and A3 simultaneously for maximum gain of response curve similar to Fig. 1. Adjust A4 to position 41.25MC and 45.75MC markers as in Fig. 1. Retouch A3 to place 45.75MC marker at 50% on curve. Retouch A1 and A3 to shape peak region of curve, if necessary.

SOUND IF ALIGNMENT

Connect two matched 100K (±1%) resistors in *series* from point Ⓚ to chassis. The junction of these two resistors is alignment point Ⓛ as shown on the schematic.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	Direct	High side to point Ⓛ. Low side to chassis.	4.5MC (unmod)	Any non-interfering channel.	DC probe to point Ⓛ. Common to chassis.	A5, A6	Adjust for maximum deflection on VTVM.
7.	"	"	"	DC probe to point Ⓚ. Common to point Ⓚ.	A7	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. Repeat steps 6 and 7.

If 4.5MC generator of crystal accuracy is not available, a station signal may be used.

VHF OSCILLATOR ALIGNMENT FOR TUNERS #RJX-084 AND #RJX-085

Connect bias as under "Video IF Alignment".
Set fine tuning control 1/3 turn from fully counter clockwise.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Thru dummy antenna (Fig. 3) across primary of antenna matching transformer (L1).	213MC (10-15MC Swp)	211.25MC	13	Vert. amp thru 10K to point Ⓐ. Low side to chassis.	A8	Adjust so that marker falls at 50% on response curve as in Fig. 3.
9.	"	"	201MC (10-15MC Swp)	11	"	A9	"
10.	"	"	183MC (10-15MC Swp)	8	"	A10	"
11.	"	"	85MC (10-15MC Swp)	6	"	A11	"
12.	"	"	79MC (10-15MC Swp)	5	"	A12	Adjust by means of expanding or compressing coil turns. Adjust so that marker falls at 50% as in Fig. 5.
13.	"	"	69MC (10-15MC Swp)	4	"	A13	Same as step 8.
14.	"	"	63MC (10-15MC Swp)	3	"	A14	Same as step 12.
15.	"	"	57MC (10-15MC Swp)	2	"	A15	"

VHF RF AND MIXER ALIGNMENT FOR TUNERS #RJX-084 AND #RJX-085

Connect bias as under "Video IF Alignment".
When checking response, tuner shield must be in place.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide usable pattern on scope.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
16.	Fig. 2	Thru dummy antenna (Fig. 2) across primary of antenna matching transformer (L1).	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. amp thru 10K to point Ⓐ. Low side to chassis.	A16, A17, A18, A19	Adjust A16, A17 and A18 for maximum gain and symmetry with markers placed as in Fig. 6. Bandwidth is varied by changing position of C13 with respect to adjacent coil. If necessary, adjust A19 SLIGHTLY to reduce dip or tilt.
17.	"	"	177MC (10MC Swp)	175.25MC 179.75MC	7	"	A20, A21	Adjust for maximum gain and symmetry similar to Fig. 4 with markers as indicated. Repeat step 16 retouching A16, A17 & A18, if necessary.
18.	"	"	207MC (10MC Swp)	205.25MC 209.75MC	12	"		Make compromise adjustments of A20 and A21 for channels 12 thru 7, if necessary. Replace tuner shield when checking response.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			193MC (10MC Swp)	191.25MC 195.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
19.	"	"	85MC (10MC Swp)	83.25MC 87.75MC	6	"	A22, A23, A24,	Adjust for curve similar to Fig. 5. Adjusted in numerical order, the bandwidth is first affected, then the sound side of the curve, then the video side. Replace tuner shield when checking response.

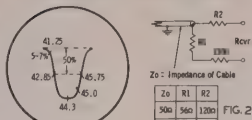


FIG 1

FIG. 2

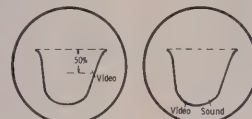


FIG 3

FIG 4

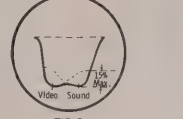


FIG 5

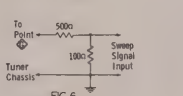


FIG.6

FIG 7

FIG 8

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
20.	"	"	79MC (10MC Swp)	77.25MC 81.75MC	5	"	A25, A26, A27	"
21.	"	"	69MC (10MC Swp)	67.25MC 71.75MC	4	"	A28, A29, A30	"
22.	"	"	63MC (10MC Swp)	61.25MC 65.75MC	3	"	A31, A32, A33	"
23.	"	"	57MC (10MC Swp)	55.25MC 59.75MC	2	"	A34, A35 A36	"

40MC CHANNEL ALIGNMENT OF VHF TUNER #RJX-085

Connect bias as under "Video IF Alignment".
Remove IF link from L7 and terminate with 68Ω carbon resistor at open end.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
24.	Fig. 6	High side thru network (Fig. 6) to point Ⓒ. Low side to tuner chassis.	830MC (30MC Swp)	40.5MC 45.75MC	Between channels 3 & 4.	Vert. amp thru 10K to point Ⓐ. Low side to chassis.	A37, A38, A39	Adjust A37 for maximum gain at 40.5MC marker and A38 for maximum gain at 45.75MC marker. Adjust A39 for maximum gain and MINIMUM tilt as in Fig. 7.

VHF OSCILLATOR ALIGNMENT FOR TUNER #RJX-094

Connect bias as under "Video IF Alignment".
Set fine tuning 10-15 degrees from full clockwise. When checking response, the tuner shield must be in place.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide usable pattern on scope.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
25.	Fig. 2	Thru dummy antenna (Fig. 2) across primary of antenna transformer.	213MC (10MC Swp)	211.25MC	13	Vert. amp thru 47K to point Ⓐ. Low side to chassis.	A40	Adjust so that marker falls at 50% on curve as in Fig. 3. Adjust A41 thru A46 and A48 thru A51 by compressing or expanding coil turns.
			207MC (10MC Swp)	205.25MC	12		A41	
			201MC (10MC Swp)	199.25MC	11		A42	
			195MC (10MC Swp)	193.25MC	10		A43	
			189MC (10MC Swp)	187.25MC	9		A44	
			183MC (10MC Swp)	181.25MC	8		A45	
			177MC (10MC Swp)	175.25MC	7		A46	
			85MC (10MC Swp)	83.25MC	6		A47	
			79MC (10MC Swp)	77.25MC	5		A48	
			69MC (10MC Swp)	67.25MC	4		A49	
			63MC (10MC Swp)	61.25MC	3		A50	
			57MC (10MC Swp)	55.25MC	2		A51	

RF AND MIXER ALIGNMENT FOR TUNER #RJX-094

Connect the negative lead of a 3 volt bias supply to point Ⓐ. Positive to chassis.
When checking response, tuner shield must be in place.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide usable pattern on scope.
Deluxe A1 by turning counter clockwise 3 turns. After completing alignment, readjust A1 as under "Video IF Alignment".
Disconnect link from tuner output leaving the ground wire connected. Connect a 100Ω resistor from tuner output link to chassis.
Adjustment of the gimmick of the 39MMF coupling capacitor will affect the bandwidth.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
26.	Fig. 2	Thru dummy antenna (Fig. 2) across primary of antenna matching transformer (L1).	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. amp thru 10K to point Ⓐ. Low side to chassis.	A52, A53, A54, A55	Adjust by compressing or expanding coil turns for maximum gain and symmetry similar to Fig. 4. Adjust A53 for sound side of curve. Adjust A55 for video side of curve.
27.	"	"	207MC (10MC Swp)	205.25MC 209.75MC	12	"	A56, A57, A58	Adjust by compressing or expanding coil turns for curve similar to Fig. 6. Adjust in numerical order, the bandwidth is the first adjustment, then the sound side of curve and then the video side.
28.	"	"	201MC (10MC Swp)	199.25MC 203.75MC	11	"	A59, A60, A61	"
29.	"	"	195MC (10MC Swp)	193.25MC 197.75MC	10	"	A62, A63, A64	"
30.	"	"	189MC (10MC Swp)	187.25MC 191.75MC	9	"	A65, A66, A67	"
31.	"	"	183MC (10MC Swp)	181.25MC 185.75MC	8	"	A68, A69, A70	"
32.	"	"	177MC (10MC Swp)	175.25MC 179.75MC	7	"	A71, A72, A73	"
33.	"	"	85MC (10MC Swp)	83.25MC 87.75MC	6	"	A74, A75, A76	Adjust by compressing or expanding coil turns for curve similar to Fig. 5. Adjust in numerical order, the bandwidth is the first adjustment, then the sound side of curve and then the video side.
34.	"	"	79MC (10MC Swp)	77.25MC 81.75MC	5	"	A77, A78, A79	"
35.	"	"	69MC (10MC Swp)	67.25MC 71.75MC	4	"	A80, A81, A82	"
36.	"	"	63MC (10MC Swp)	61.25MC 65.75MC	3	"	A83, A84, A85	"
37.	"	"	57MC (10MC Swp)	55.25MC 59.75MC	2	"	A86, A87, A88	"

ALIGNMENT INSTRUCTIONS (cont)

UHF TUNER ALIGNMENT

If UHF tuner has to be removed from its mounting for alignment, extend cables and ground to main chassis.
For 43.5MC marker, connect a separate generator loosely to UHF IF input jack.
Connect bias as under "Video IF Alignment".
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
38.	Fig. 2	Across UHF antenna terminals thru antenna matching network (Fig. 2).	460MC (10MC Swp)	43.5MC 460MC	UHF Rotate UHF tuner shaft fully counter clockwise.	Vert. amp. thru 10K to point (F). Low side to chassis.	A89	Adjust A89 to make 460MC marker coincide with 43.5MC marker.
39.	"	"	910MC (10MC Swp)	43.5MC 910MC	Rotate UHF tuner shaft fully clockwise.	"	A90	Adjust A90 with a plastic crochet needle or similar device to make 910MC marker coincide with 43.5MC marker. Repeat steps 38 and 39 until marker coincidence is achieved on both ends of the band.
40.	"	"	530MC (10MC Swp)	43.5MC 530MC	Rotate UHF tuner shaft until 530MC marker coincides with 43.5MC marker.	"		Connect a short between the two feed thrus nearest the crystal diode mounting. (Do not short to chassis.)
41.	"	"	"	530MC	Leave as above.	Disconnect coaxial cable from VHF tuner and connect a 33Ω carbon resistor from inner conductor to shield. Connect vert. amp. across the 33Ω resistor thru an audio amplifier.	A91, A92	Use maximum gain on scope and amplifier and adjust sweep output to provide 2 inch peak to peak response curve on scope. Adjust A91 and A92 to obtain symmetrical response curve similar to Fig. 8. Remove the short from the feed-thrus. Remove the amplifier and 33Ω resistor and connect coaxial cable to VHF tuner.
42.	"	"	880MC (10MC Swp)	43.5MC 880MC	Rotate UHF tuner shaft to make 880MC marker coincide with 43.5MC marker.	Vert. amp. thru 10K to point (F). Low side to chassis.		
43.	"	"	"	880MC	Leave as above.	Same as step 41.	A93, A94	Use maximum gain on scope and amplifier and adjust sweep output to provide 2 inch peak to peak response curve on scope. Adjust A93 and A94 to give symmetrical response curve similar to Fig. 8. Remove the short from feed thrus. Remove amplifier and 33Ω resistor and connect coaxial cable to VHF tuner. Repeat steps 40 thru 43 until symmetrical response is obtained at both 530MC and 880MC.

Check the response curve over the entire UHF band and check for abnormally low gain points within the tuning range. This is usually caused by insufficient oscillator injection and is checked by measuring the crystal current. To do this, disconnect UHF output cable and connect a 0-5MA meter across output cable. The crystal current should be between .65MA and 3MA under normal conditions. If the reading is outside these limits, adjust the oscillator injection loop position (A95) with respect to the crystal clip terminal.

GENERAL ELECTRIC MODELS
9T001, 9T002 ("T" Line)

RESISTOR IDENTIFICATION

RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6CE5	2.4Meg	0Ω	7Ω	4.5Ω	† 25Ω	† 2200Ω	0Ω		
V2	9U8	† 15K	160K	† 4700Ω	0Ω	4.5Ω	† 1000Ω	0Ω	0Ω	10K
V3	6CB6A	2.4Meg	56Ω	11.5Ω	9Ω	† 500Ω	† 500Ω	0Ω		
V4	6CB6A	.1Ω	56Ω	32Ω	30Ω	† 500Ω	† 500Ω	0Ω		
V5	12CT8	† 25K	2.7Meg	0Ω	22Ω	16Ω	† 3300Ω	† 25Ω	300K	0Ω
V6	6AU6A	1.8Ω	0Ω	30Ω	27Ω	† 500Ω	† 500Ω	180Ω		
V7	10C8	† 470K	6.8Meg	0Ω	22Ω	27Ω	† 385Ω	† 25Ω	1Meg	220Ω
V8	10C8	•† 8Meg	• 5.5Meg	0Ω	16Ω	11.5Ω	‡1500Ω	‡1500Ω	• 1.2Meg	0Ω
V9	7AU7	† 75K	80K	1300Ω	36Ω	32Ω	† 12K	1.7Meg	1300Ω	34Ω
V10	18A5	900K	36Ω	0Ω	NC	‡25Ω	NC	44Ω	† 25Ω	
V11	17H3	¶	NC	† 25Ω	44Ω	52Ω	NC	NC	† 25Ω	
V12	1V2	‡ 180Ω	PINS	2 THRU 8	HAVE	INF	RESISTANCE			‡180Ω
V13	9QP4	9Ω	0Ω	‡7.5Ω	PIN 6 INF	PIN 10 ‡7.5Ω	PIN 11 • 350K	PIN 12 7Ω		

¶ THIS READING WILL VARY GREATLY, (10K MINIMUM), DUE TO THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.

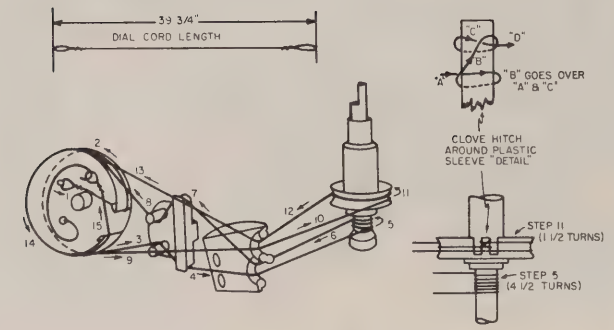
† MEASURED FROM OUTPUT OF M1.

‡ MEASURED FROM PIN 1 OF V11.

• THIS READING WILL VARY CONTROL SET FOR NORMAL OPERATION.

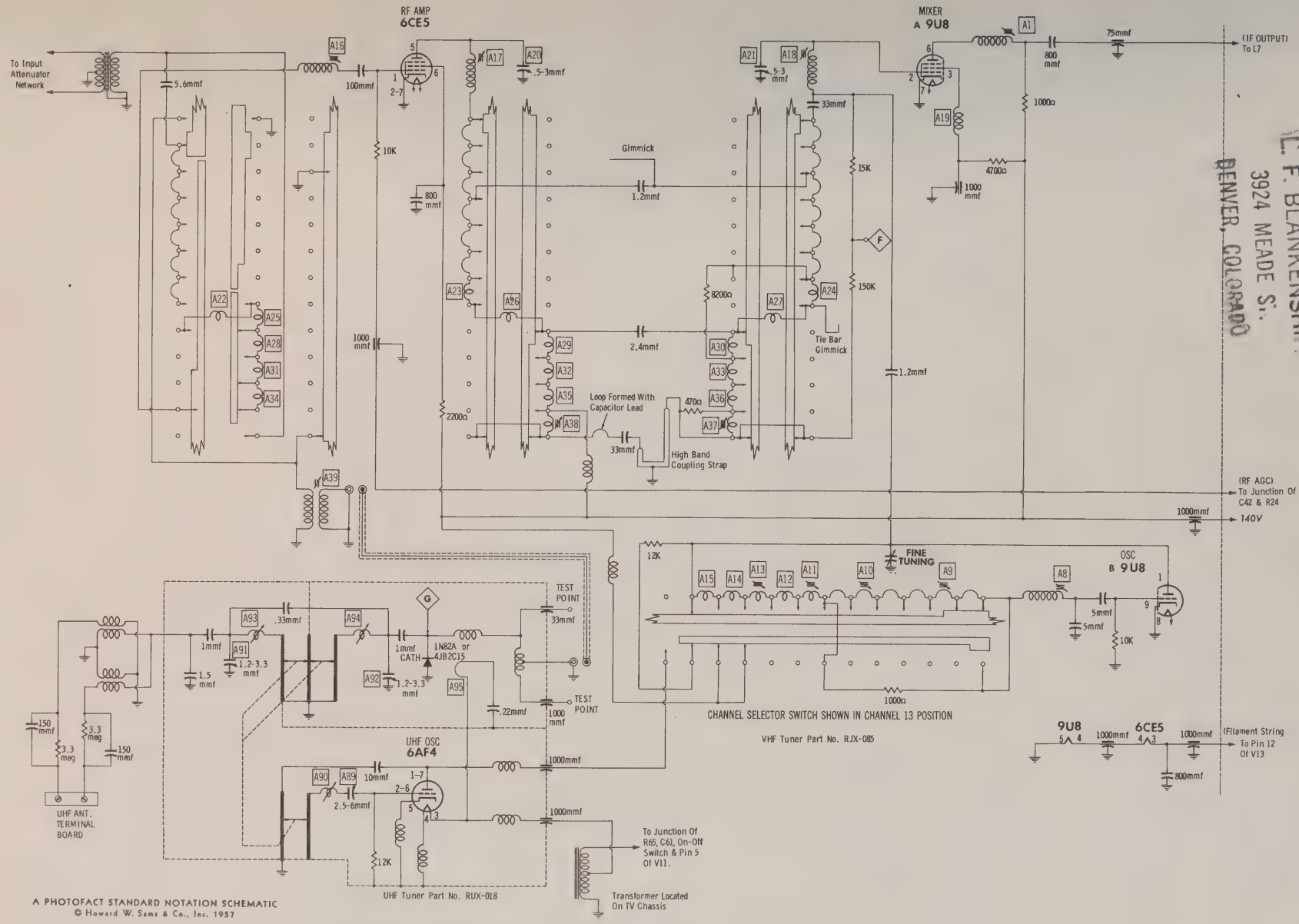
HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

1. Turn the set on and tune in a TV station preferably with a test pattern.
2. Connect lead from point (K) to point (L).
3. Connect a 1000Ω resistor across horizontal freq. coil (L14) from point (M) to point (N).
4. Adjust horizontal hold control so that the picture floats back and forth across the screen.
5. Remove the resistor from across L14 and adjust B1 (horiz. freq. slug) so that the picture again floats back and forth across the screen.
6. Remove clip lead from point (K) to point (L). Readjust the horizontal hold control, if necessary.



POSITION OF PULLEYS & FINE TUNING PLATE ARE IN EXTREME COUNTER CLOCKWISE POSITION.

UHF DRIVE CORD STRINGING



PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

ALTERNATE UHF-VHF TUNER SCHEMATIC

GENERAL ELECTRIC MODELS
9T001, 9T002 ("T" Line)

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No	USE	TYPE	NOTES
V1	RF Amp.	8CE5	Note 1
V2	Mixer-Osc.	9U8	
V3	1st Video IF Amp.	9CH8A	
V4	2nd Video IF Amp.	6CH6A	
V5	Video Output-Sync Sep.	12CT8	
V6	Sound IF Amp.	6AL5A	

ITEM No	USE	TYPE	NOTES
V7	AF Amp.-Audio Output	10C8	
V8	Vert. Mult. -Vert. Output	10C8	
V9	Horiz. Mult.	7AU7	
V10	Horiz. Output	18A5	
V11	Damper	17W3	
V12	HV Rectifier	1V3	

Note : Some versions may use 6BC5A in this application.

PICTURE TUBE

ITEM No	REPLACEMENT DATA				NOTES
	G. E. PART No	.85 PART No	GENERAL ELECTRIC PART No	SYLVANIA PART No	
V13	9QP4		9QP4	9QP4	

ELECTROLYTIC CAPACITORS

ITEM No	RATING		REPLACEMENT DATA						
	CAP	VOLT	G. E. PART No	AEROVOX PART No	CORNELL-DUBILIER PART No	MALLORY PART No	PYRAMID PART No	SANGAMO PART No	SPRAGUE PART No
C1	300	150	RCE-240	AFH2A-24-75	XA2S3	FP119	TMA-27	S-115	TVL-1434
C2A	+200	150	RCE-241	AFH52- 35-50		+P118	TMA-28	S-110	R2894*
B	+50	150				†FE68	†TD-50-350	†MTD-4530	
C3	4	50	RCE-235	PRS150V4	BBR4-50	TC30	TD-4-50	MMT-0505	TVA-1303

* Non catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							
	CAP	VOLT	G. E. PART No	AEROVOX PART No	CENTRALAB PART No	CORNELL-DUBILIER PART No	ERIE PART No	MALLORY PART No	SPRAGUE PART No	NOTES
C4	150		RCW-3289							
C5	150		RCW-3289							
C6	5.6		RCW-3295	BPD-00005	D6-050	C10V5C		ET-565		
C7	100		RCW-3298		TCL-100					
C8	3-3		RCW-090		RPG-3		3115-D	CT565A		N1500
C9	1000			BPD-001	DD-102	BYA6D1	ED-1000	DC521	5HK-D1	D
C10	2.7			NPO-S1 2. 2						
C11	1.0			NPO-S1 1	TCZ-1		TCQ-1		5TCCB-V1	
C12	47		RCW-3145		TCL-47					N1500
C13	5		RCW-3148							N1500
C14	13		RCW-3289	N750-S1 10	TCN-13	C10Q13U	TCT-13			N750
C15	2. 2				TCZ-1					
C16	47		RCW-3297		TCL-47					N1500
C17	3-3		RCT-090		RPG-3		3115-D	CT565A		
C18	1000			BPD-001	DD-102	BYA6D1	ED-1000	DC521	5HK-D1	D
C19	1000		RCW-3117	KF-001	MPT-1000				5G3C-D1	
C20	1000		RCW-3117	KF-001	MPT-1000				5G3C-D1	
C21	1000		RCW-3117	KF-001	MPT-1000				5G3C-D1	
C22	1000		RCW-3117	KF-001	MPT-1000				5G3C-D1	
C23	1000			BPD-001	DD-102	BYA6D1	ED-1000	DC521	5HK-D1	D
C24	1000		RCW-3117	KF-001	MPT-1000				5G3C-D1	
C25	75		RCW-3288	N750-S1 75	TCE-75	C10Q75U	TCT-75	NT-5475	5TCU-Q75	N750
C26	1000			BPD-001	DD-102	BYA6D1	ED-1000	DC521	5HK-D1	
C27	680		RCW-3051							N220
C28	2. 4		RCW-3287	NPO-S1 2. 2	TCZ-2R2	C10V22C				NPO
C29	5		RCW-3067	NPO-S1 5	TCZ-5	C10V5C	TCO-5	ZT-555		NPO
C30	750		RCW-3211	BPD-0008	DD-751	LT5T7S	ED-750	UC-5375	5GA-T75	
C31	.047	200	RCB-015			BC33A75		ACE-6347	5EK-S47	
C32	5000		RCW-3264	BPD-005	DD-502	BYA1DD5	ED-005	DC535	5HK-D5	
C33	8		RCW-3293			L10V8			5GA-V8	
C34	.1	400	RCB-038			BC8P1S		ACE-401	5EE-P10	
C35	2		RCW-3004	NPO-S1 3		C6V3C	TCO-3	ZT-553		
C36	30		RCW-3294	NPO-S1 30	TCZ-30	C10Q2C	TCO-30	ZT-543	5TCC-Q5	NPO ②
C37	2200		RCW-3248	BPD-0022	DC-222	BYA1DD22	ED-0022	UC-5332	5HK-D22	NPO
C38	5000		RCW-3014	BPD-005	DD-502	BYA1DD5	ED-005	DC535	5HK-D5	
C39	180		RCG-003	1485-00018		33SS1T3			MS-303	
C40	5000		RCW-3014	BPD-005	DD-502	BYA1DD5	ED-005	DC525	5HK-D5	
C41	5000		RCW-3188	BPD-005	DD-502	BYA1DD5	RD-005	DC535	5HK-D5	
C42	.1	200	RCB-017			BC5P1J		ACE-401	5EE-P10	
C43	330		RCW-3290	BPD-00033	DD-331	L10T33	ED-330	UC-5333	5GA-T33	
C44	.0047	400	RCB-003			BC5D47		ACE-6347	5EE-D47	
C45	.033	200	RCB-014			BC5S33		ACE-812	5EE-S15	
C46	.0039	400	RCB-011							
C47	.015	600	RCB-013			BC5S15			5EK-S15	
C48	1200		RCW-3187	BPD-001	D6-122	L10D12	ED-1200	UC-5212	5GA-D12	
C49	1200		RCW-3187	BPD-001	D6-122	L10D12	RD-1200	UC-5213	5GA-D12	
C50	5000		RCW-3274	BPD-005	DD-502	BYA1DD5	RD-005	DC535	5HK-D5	
C51	.1	200	RCB-017			BC5P1J		ACE-401	5EE-P10	
C52	910		RCU-346	1484-00091		1R5T91			MS-391	
C53	.0047	400	RCB-002			BC5D47J		ACE6247	4SE-D47	
C54	10000		RCW-3185	BPD-01	DD-103	BYA6D1	KD-01	DC511	5HK-S1	
C55	620		RCW-3280			L10T62				
C56	470		RCW-3218	BPD-00047	DD-471	BYA1DT47	ED-470	UC-5247	5GA-T47	
C57	1000	10000	RCW-3291							
C58	240	3000	RCW-3219							N1500
C59	800		RCW-3227	BPD-0008	DD-801	L10T8	ED-0008		5GA-T8	
C60	800		RCW-3227	BPD-0008	DD-801	L10T8	RD-0008		5GA-T8	
C61	10000		RCW-3189	BPD-01	DD-103	BYA6D1	KD-01	DC511	5HK-S1	

* Some versions use 8000MMF in this application. (Part #RCW-3037)
† Not used in some versions.

CONTROLS

ITEM No	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	G. E. PART No	CENTRALAB PART No	CLAROSTAT PART No	IRC PART No	MALLORY PART No	
R1A	500K		RRC-399					Volume
B	Switch							
R2	25K		RRC-397					Contrast
R3	L. 5Meg		RRC-402					Vertical Hold
R4	300K		RRC-398					Brightness
R5A	5Meg		RRC-400					Height
B	500K							Vert. Lin.
R6	1Meg		RRC-401					Horiz. Hold

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	G. E. PART No.	IRC PART No.	
R7	3.3Meg			BTS-3.3Meg	
R8	3.3Meg			BTS 3.3Meg	
R9	470Ω			BTS-470	
R10	330Ω			BTS 330	
R11	330Ω			BTS-330	
R12	10K			BTS-10K	
R13	2200Ω			BTS 2200	
R14	15K			BTS-15K	Note 1
R15	150K			BTS-150K	
R16	15K			BTS-15K	
R17	4700Ω			BTS-4700	
R18	1000Ω			BTS-1000	
R19	15K	2		BTB-15K	
R20	10K			BTS-10K	
R21	3300Ω				
R22	470Ω			BTS-470	
R23	680			BTS-68	
R24	2. 2Meg				
R25	33K				
R26	470Ω			BTS-470	
R27	68Ω			BTS-68	
R28	22Meg			BTS-22Meg	
R29	220K 5%			BTS 220K 5%	
R30	2300Ω			BTS-2300	
R31	220K			BTS-220K	
R32	33K			BTS-33K	
R33	3300Ω	2		BTB-3300	
R34	10K			BTS-10K	
R35	100K			BTS-100K	
R36	330K			BTS-330K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	G. E. PART No.	IRC PART No.	
R37	470Ω			BTS-470	
R38	180Ω			BTS 180	
R39	22K			BTS 22K	
R40	220Ω			BTS-220	
R41	6.8Meg			BTS-6.8Meg	Note 2
R42	1Meg			BTS-1Meg	
R43	82K			BTS-82K	
R44	68K			BTS-68K	
R45	220Ω				
R46	2300Ω				
R47	680K				
R48	560K				
R49	1Meg				
R50	82K 5%				
R51	150K 5%				
R52	4. 7Meg 5%				
R53	12K 5%				
R54	820K				Note 3
R55	100K				
R56	15K 5%				
R57	270K 5%				
R58	13000 5%				
R59	12K				
R60	82K 5%			BTS-82K 5%	
R61	820K			BTS-820K	
R62	330Ω			BTS-330	
R63	680K	1		BTA-680K	
R64	2Ω		RRW-155	BW1- 2	
R65	5Ω	5	RRW-137	PWF1-5	

Note 1: Early versions use a 10K resistor.
Note 2: Later versions use a 5. 6Meg resistor.
Note 3 A 1Meg resistor is used in some versions.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No	USE	REPLACEMENT DATA							
		G. E. PART No	Hollstron PART No	Merit PART No	RCA TYPE No	Rem PART No	Stancor PART No	Thordarson PART No	Triad PART No
T1	Horiz. Output Trans.	RTO-198							
T2	Vert. Output Trans.	RTO-196	21804 ①	A-3037 ②	2227T ①	V31S ①	A-B33 ②	28872 ①	A-103X ①
T3A	Yoke(70°)Horiz(15MH)	RLD-075		MDF-377 ②				T-33 ③ ④	
B	Vert(40MH)	RHH-012 ②			③				
		RMC-098 ③							

① Drill new mounting hole(s).
② Yoke retaining ring.
③ Yoke clamp.
④ Connect jumper from yoke term #1 to yoke term #3.
⑤ Use original yoke retaining ring and yoke clamp.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	G. E. PART No.	Hollstron PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T4	10000Ω	3-4Ω	RTO-197	21113 ①	A-3998	A-3339	24849	S-7X	① Drill one new mtg. hole.

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP	G. E. PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	ROP-025	4A07	

COILS (RF-IF)

ITEM No.	USE	G. E. PART No.	NOTES
L1	Ant. Trans.	RLA-047	
L2	Ant. Coils	RSX-084	Includes stator ass'y. complete with rotor.
L3	RF Coils	RSX-083	Includes stator ass'y. complete with rotor.

ITEM No.	USE	G. E. PART No.	NOTES
L4	Mixer Grid Coils	RSX-082	Includes stator ass'y. complete with rotor.
L5	Osc. Coils	RSX-081	Includes stator ass'y. complete with rotor.
L6	Conv. Plate Coil	RLA-402	

ITEM No.	USE	REPLACEMENT DATA				NOTES
		G. E. PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L7	1st Video IF	RLI-381				
L8	2nd Video IF	RTL-193				
L9	Series Peaking Coil	RLI-207	19-1300	TV-181	6112	100 Microhenries
L10	Series Peaking Coil	RLI-205	19-3123		6178	120 Microhenries
L11	Shunt Peaking Coil	RLI-184	19-3300	TV-180	6132	330 Microhenries
L12	1st Sound IF	RLI-394				Includes C36. Note 1
L13	Line Choke	RLI-393				32 Microhenries

Note 1: Some versions use part #RLI-408 and delete C-38.

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES.		REPLACEMENT DATA								NOTES
	PRI	SEC	G. E. PART No	MEISSNER PART No	MERIT PART No	MILLER PART No	RCA TYPE No	Rem PART No	Thordarson PART No	Triad PART No	
L14	75Ω		RLI-380								

FILTER CHOKE

ITEM No	RATINGS			REPLACEMENT DATA					
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 CY.)	G. E. PART No	Hollstron PART No	Merit PART No	Stancor PART No	Thordarson PART No	Triad PART No
L15	300A	25Ω	6HY	RLF-078	C9040	C-3994	C-3237	28C41	C-24X

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	REPLACEMENT DATA	
			G. E. PART No	
K1	Chassis Isolation	4700MMF, 1Meg	RCR-001*	
K2	Audio De-emphasis	1000MMF, 4500MMF, 10000MMF, 22K	RER-014	Aerovox PA-423 Centralab PC-186 Sprague PB-3
K3	Audio	680MMF 10000MMF, 6.8Meg 1Meg, 470K	RER-017	Aerovox PA-318
K4	Vert. Int.	800MMF, 800MMF, 180MMF, 1300MMF, 82K, 100K, 47K, 47K	RER-018	
K5	Horiz. -Sync	4700MMF 800MMF, 10000MMF, 470K, 2.2Meg	RER-015	Aerovox PA-525

* Early production used individual units of 1Meg and 5000MMF in this application.

RECTIFIERS

ITEM No	RATING	REPLACEMENT DATA						
	CURRENT (Measured)	G. E. PART No	FEDERAL PART No	GENERAL ELECTRIC PART No	INTERNATIONAL PART No	MALLORY PART No	RADIO RECEPTOR PART No	SARKES TARZIAN PART No
M1	.300A	RER-025 ↓	1090A ↓	1N1007 ②	R3300BL ↓	66300 ↓	6Q4 ↓	300 ↓
M2		RER-023 ↓	1215 ↓ ③		121 ↓ ③			

① Selenium type.
② Germanium type.
③ 3 required.

FUSES

ITEM No	TYPE	RATING	REPLACEMENT DATA					
			G. E. PART No		LITTELFUSE PART No		BUSS PART No	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M3	N	1 1/4A 125V S/B	RKF-029	RKW-008*	3331.25 (N-1 1/4A)	346011	N 1 1/4	HN 3/4 to 1 1/4

* Includes clip.

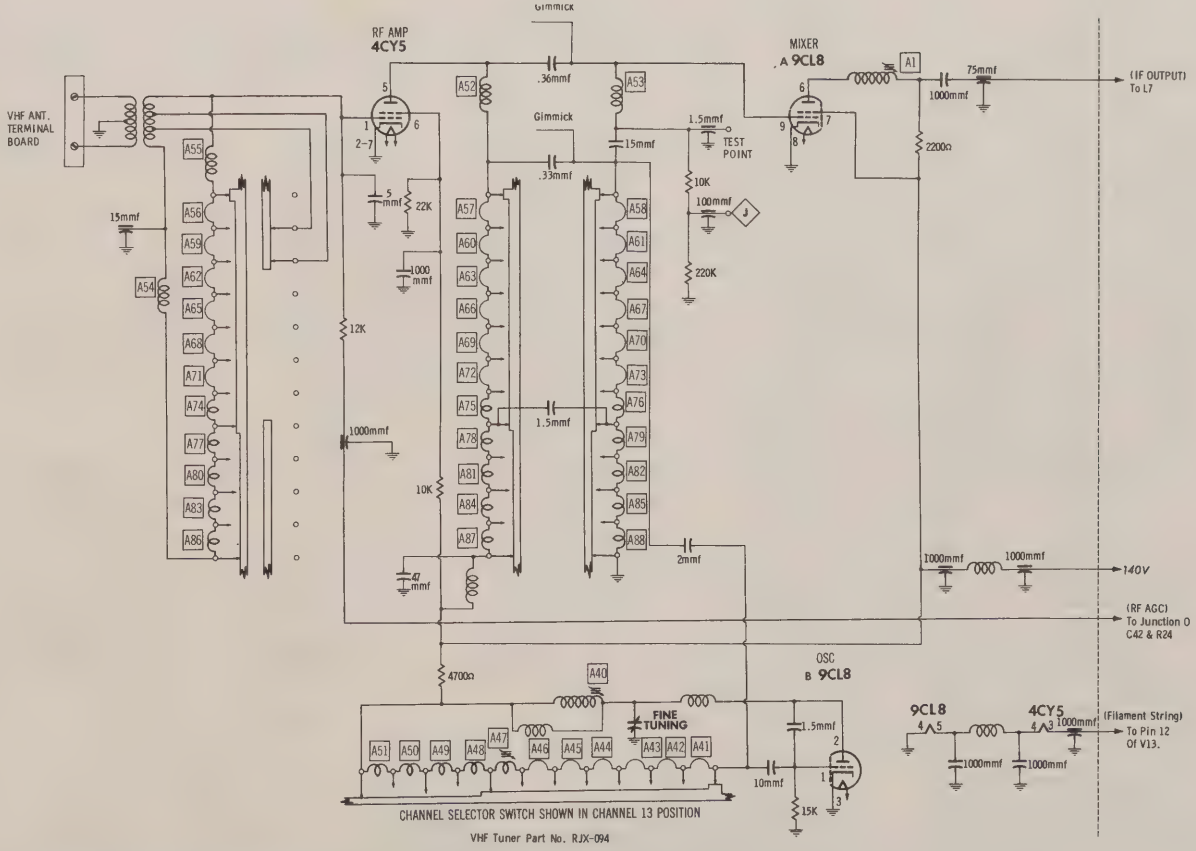
CRYSTAL DIODES

ITEM No.	OBSG. TYPE	REPLACEMENT DATA		NOTES
		G. E. PART No.	SYLVANIA PART No.	
M4	1N87G*	RED-001	1N85	Video Detector (Pigtail)
M5	1N87G	RED-001	1N60	Ratio Detector (Pigtail)
M6	1N87G	RED-001	1N60	Ratio Detector (Pigtail)

* A 1N64 may be used in some versions.

MISCELLANEOUS

ITEM No	PART NAME	G. E. PART No	NOTES
M7	Tuner	RJX-084	VHF 12 Position.
	Tuner	RJX-094	VHF.
	Tuner	RJX-085	VHF, 13 Position.
	Tuner	RUX-015	UHF
M8	Crystal Det. Ass'y.	RLI-392	Includes 3rd Video IF, Shunt Peaking Coil and Two Series Peaking Coils.
M9	Crystal Det. Ass'y.	RTD-087	Includes Ratio Det. and Resistors.
M10	Switch		Local-Distance, Slide Type (DPDT). Note: Not used in some versions.
M11	Centering Device	RNA-014	
M12	Ion Trap	RET-015	
	Yoke Clamp	RMC-098	
	Printed Board	RSU-003	Ant. Terminal Ass'y.
	Safety Glass	RUW-113	
	Handle	RHY-086	
	Knob	RDK-616	VHF Channel Selector, Model 9T00L
	Knob	RDK-620	VHF Channel Selector, Model 9T02.
	Knob	RDK-619	UHF Tuning Model 9T001, Brown.
	Knob	RDK-621	UHF Tuning, Model 9T003, Turquoise.
	Knob	RDK-617	Fine Tuning
	Knob	RDK-618	On-Off Volume, Vertical Hold and Contrast (3 Used) Model 9T001.
	Knob	RDK-1096	On-Off Volume, Vertical Hold and Contrast (3 Used) Model 9T003.
	Cabinet Front	RAC-208	Model 9T00L
	Cabinet Front	RAC-209	Model 9T003.
	Cabinet Body	RAV-1034	Model 9T001, Includes Back.
	Cabinet Body	RAV-1035	Model 9T003, Includes Back.



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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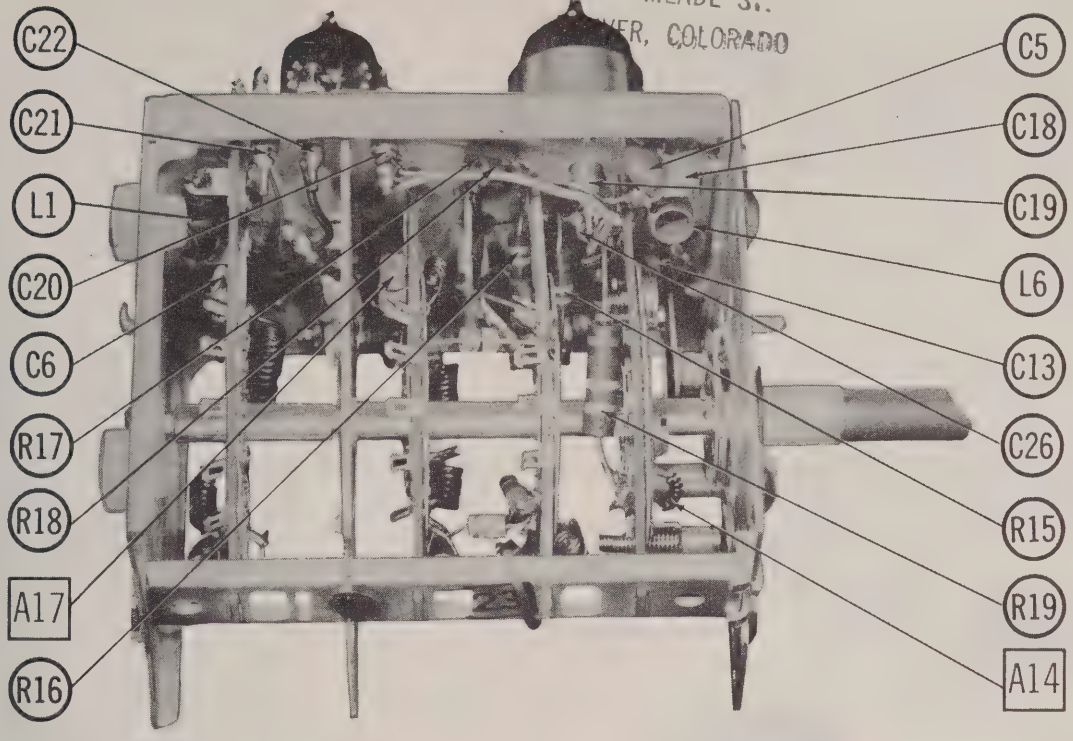
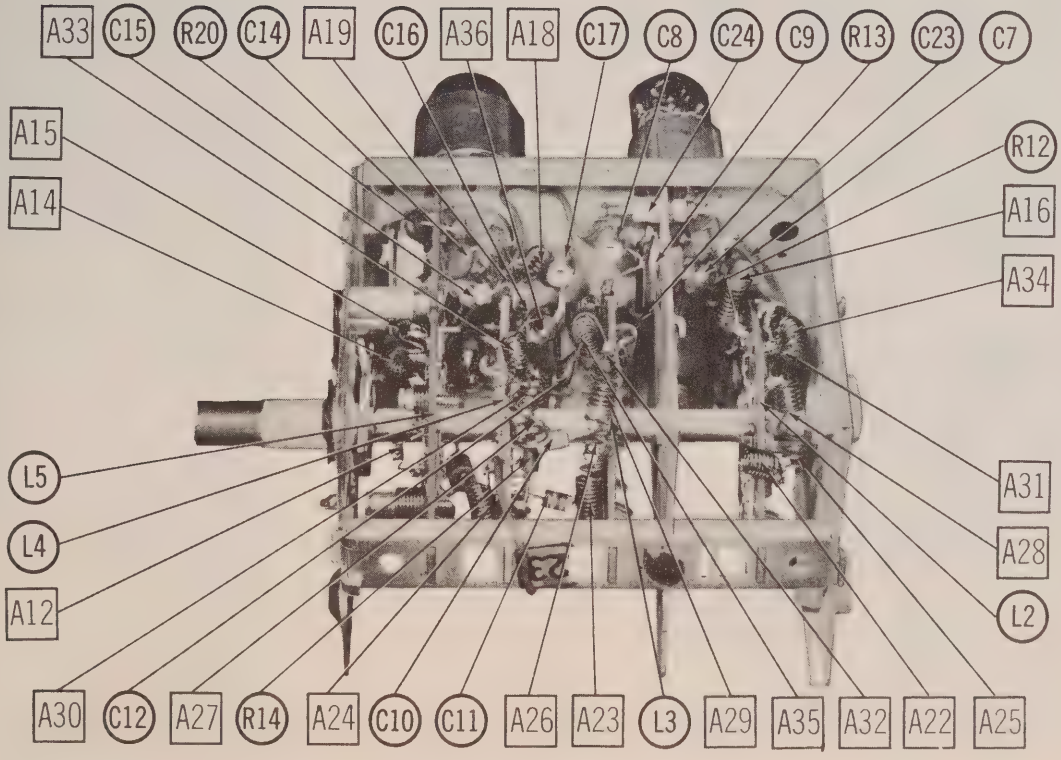
ALTERNATE VHF TUNER SCHEMATIC

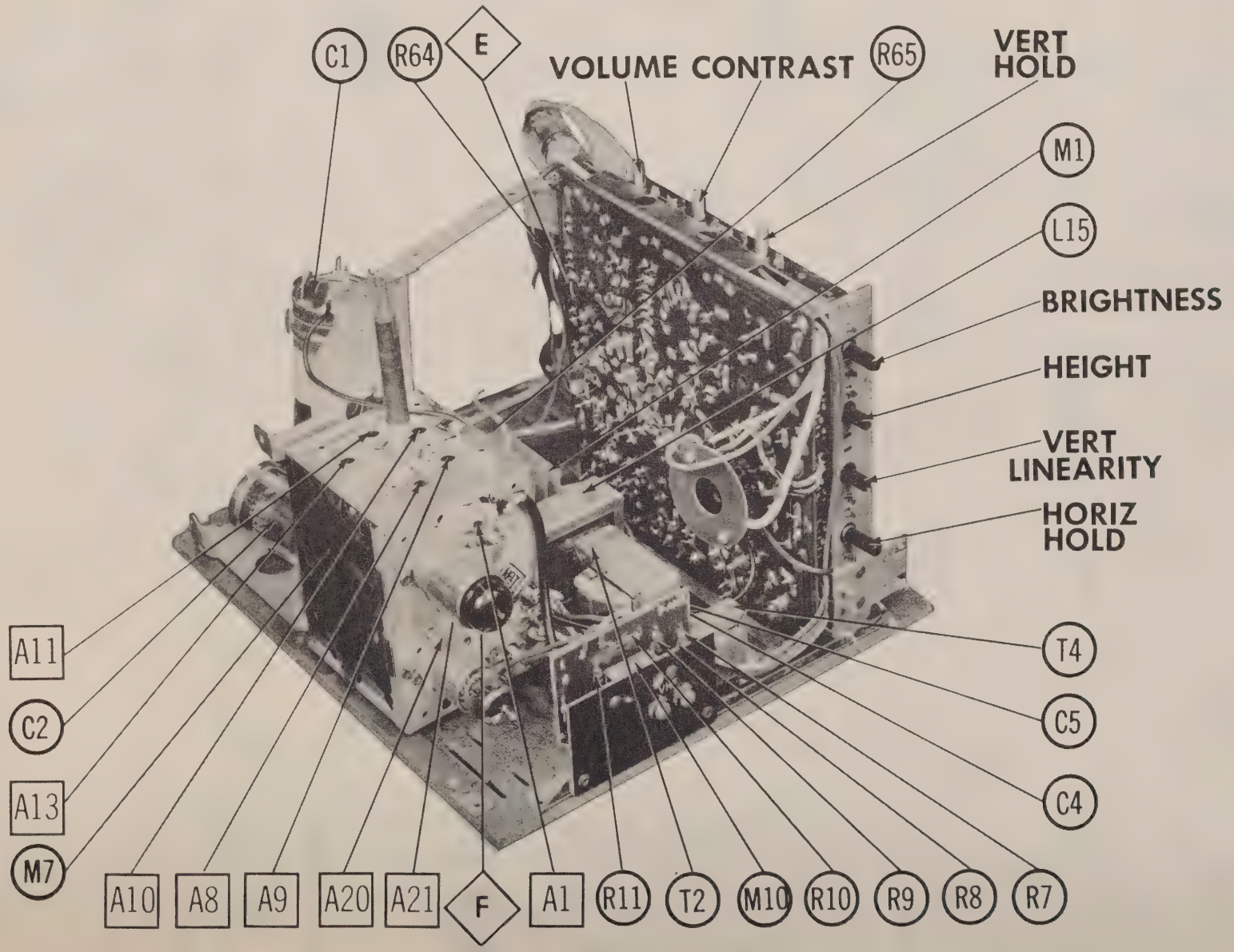
PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO



RF TUNER-LEFT SIDE



RF TUNER-RIGHT SIDE



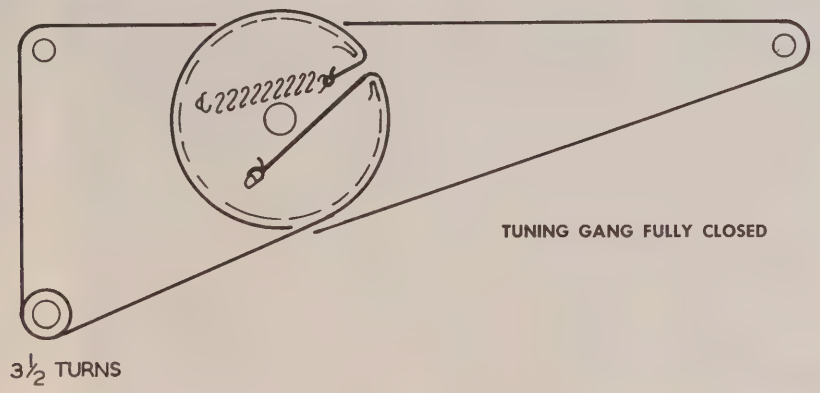
CHASSIS ASSEMBLED VIEW

PROPERTY OF
L. F. BLANKENSHIP
MEADE ST.
COLORADO

MASCO
MODEL AFR

MASCO
MODEL AFR

TRADE NAME	Masco Model AFR		
MANUFACTURER	Mark Simpson Mfg. Co., Inc., 32-28 49th. St., Long Island City 3, N.Y.		
TYPE SET	AC Operated FM-AM Receiver		
TUBES	Thirteen		
POWER SUPPLY	110-120 Volts AC- 50/60 Cycles	RATING	.83 Amp. @ 117 Volts AC (90 Watts)
TUNING RANGE-BROADCAST	540KC-1650KC	FREQ. MOD.	88MC-108MC



DIAL CORD STRINGING

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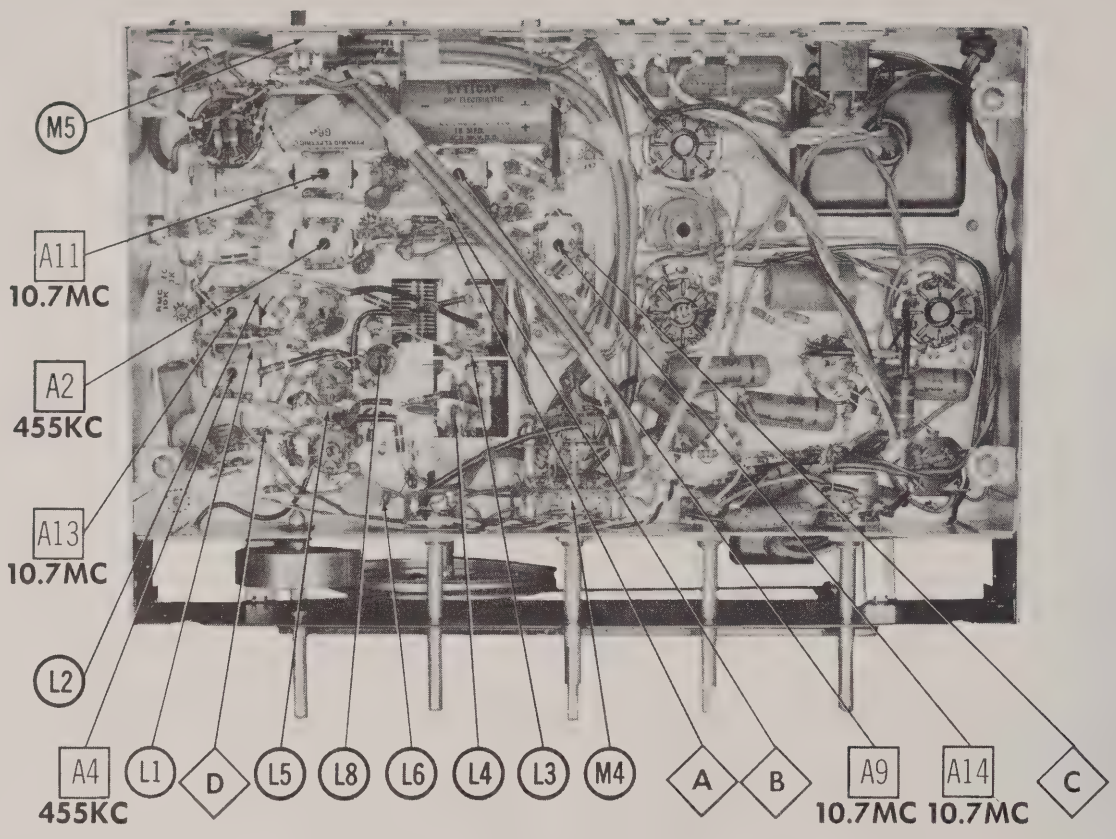
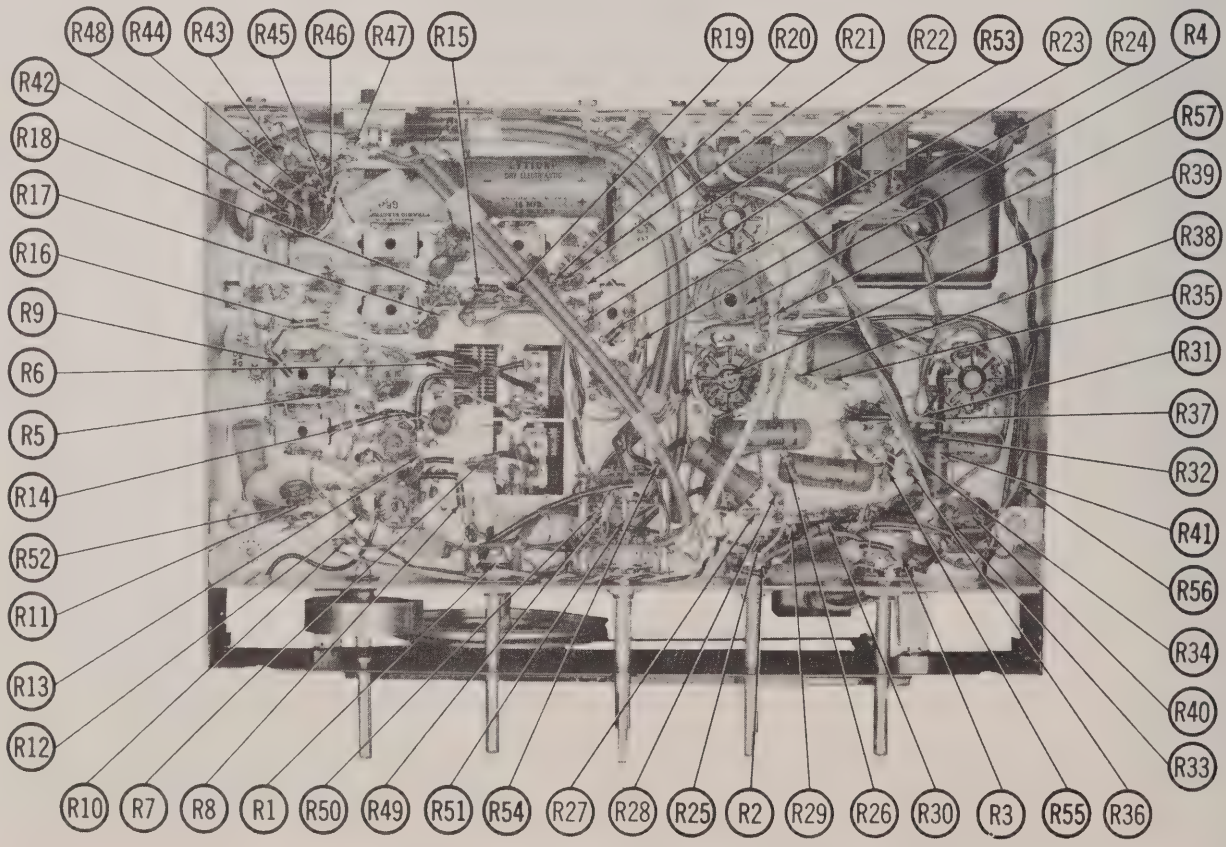
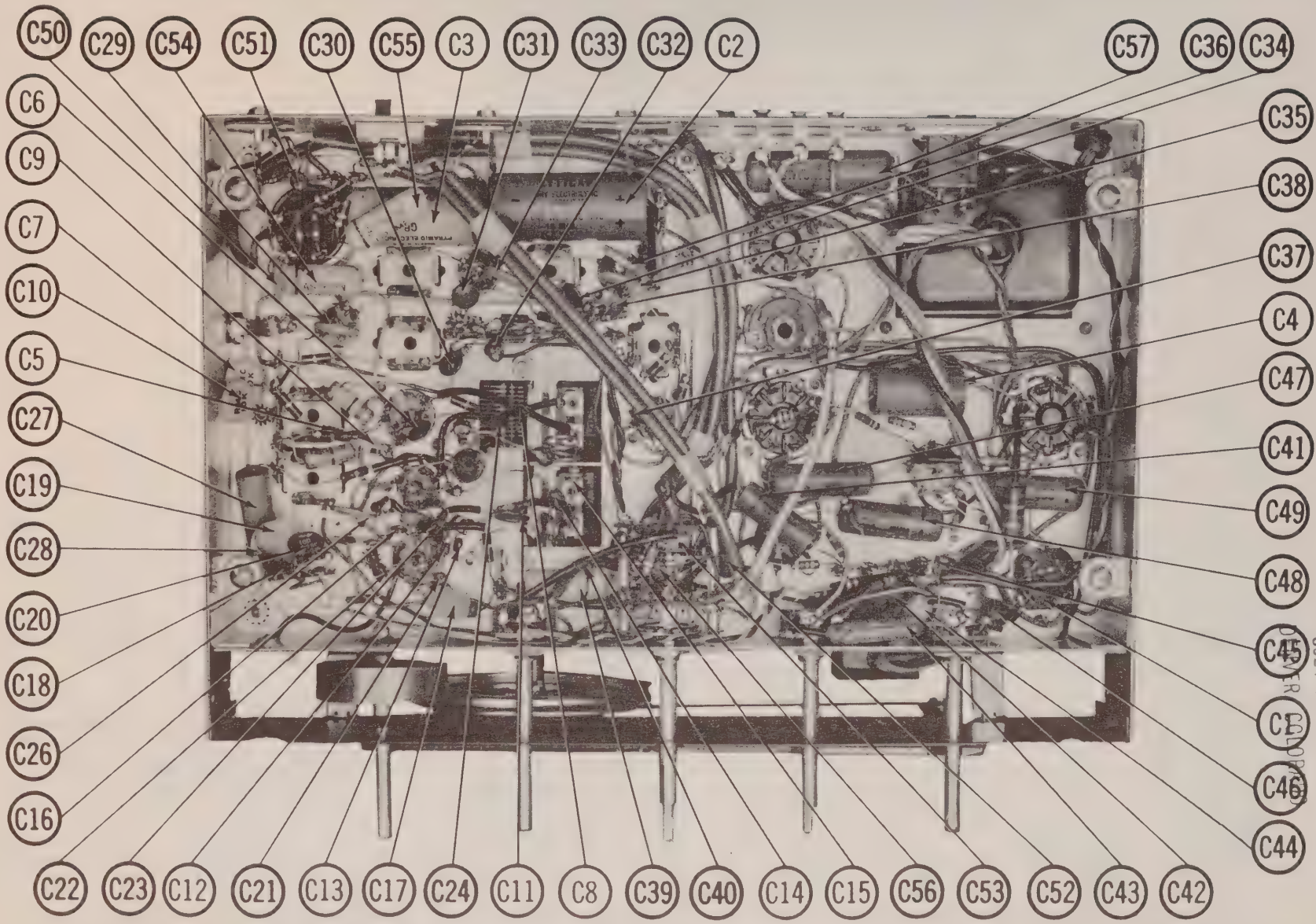


CHASSIS BOTTOM VIEW-INDUCTOR AND ALIGNMENT IDENTIFICATION



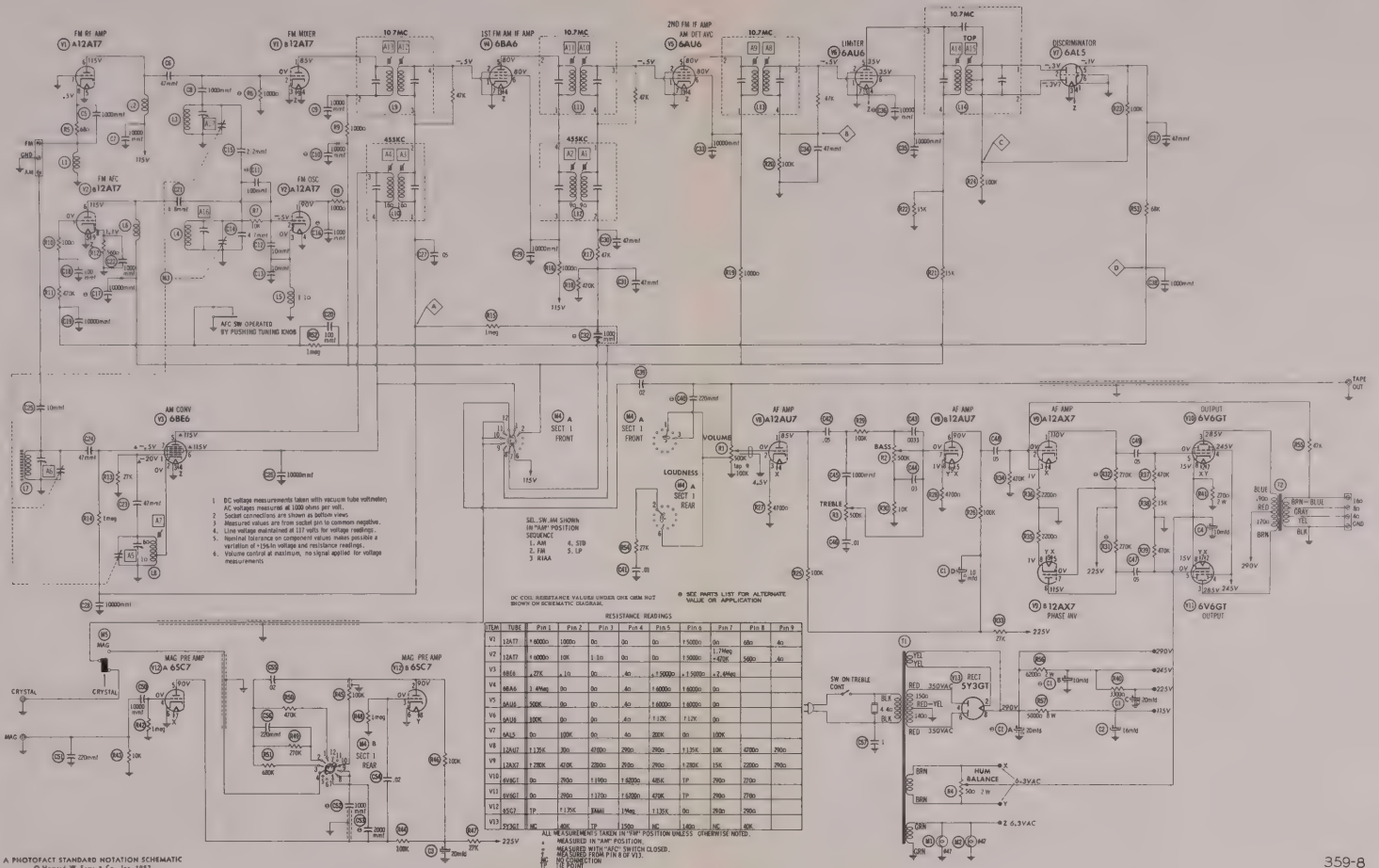
CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE St.
DENVER COLORADO

MODEL AFR
MASCO


FM RF AMP V1 A12AT7
FM MIXER V1 8 12AT7
10.7MC
1ST FM AM IF AMP V4 6BA6
2ND FM IF AMP AM DET AVC V5 6AU6
LIMITER V6 6AU6
DISCRIMINATOR V7 6AL5
TOP
FM AFC V10 8 12AT7
FM OSC V2 A12AT7
455KC
AFC SW OPERATED BY PUSHING TUNING KNOB
AM CONV V3 6BE6
VOLUME
LOUDNESS
BASS
TREBLE
AF AMP V8 A12AU7
AF AMP V8 8 12AU7
AF AMP V9 A12AX7
OUTPUT V10 6V6GT
PHASE INV V9 8 12AX7
OUTPUT V11 6V6GT
SW ON TREBLE CONT
RECT V13 5Y3GT
HUM BALANCE
6.3VAC
MAG PRE AMP V12 A 6SC7
MAG PRE AMP V12 B 6SC7
CRYSTAL
MAG
TAPE OUT
SEL. SW. AM SHOWN IN "AM" POSITION SEQUENCE
1. AM 2. FM 3 RIAA 4. STD 5. LP
DC VOLTAGE MEASUREMENTS TAKEN WITH VACUUM TUBE VOLTMETER.
AC VOLTAGES MEASURED AT 1000 OHMS PER VOLT.
SOCKET CONNECTIONS ARE SHOWN AS BOTTOM VIEWS
MEASURED VALUES ARE FROM SOCKET PIN TO COMMON NEGATIVE.
LINE VOLTAGE MAINTAINED AT 117 VOLTS FOR VOLTAGE READINGS.
NOMINAL TOLERANCE ON COMPONENT VALUES MAKES POSSIBLE A VARIATION OF ±15% IN VOLTAGE AND RESISTANCE READINGS.
VOLUME CONTROL AT MAXIMUM, NO SIGNAL APPLIED FOR VOLTAGE MEASUREMENTS
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
RESISTANCE READINGS
ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE NOTED.
MEASURED IN "AM" POSITION.
MEASURED WITH "AFC" SWITCH CLOSED.
MEASURED FROM PIN 8 OF V13.
NO CONNECTION
TIE POINT
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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359-8

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AT7	†60000	1000	0	0	0	†50000	0	68	4
V2	12AT7	†60000	10K	1.1	0	0	†50000	1.74Meg + 470K	560	4
V3	6BE6	27K	1.1	0	4	4	†50000	†50000	+ 2.4Meg	
V4	6BA6	1.4Meg	0	0	4	4	†60000	†60000	0	
V5	6AU6	300K	0	0	4	4	†60000	†60000	0	
V6	6AU6	100K	0	0	4	4	†12K	†12K	0	
V7	6AL5	0	100K	0	4	4	200K	0	100K	
V8	12AU7	†125K	30	47000	290	290	†135K	10K	47000	290
V9	12AX7	†280K	470K	2200	290	290	†280K	15K	2200	290
V10	6V6GT	0	290	†1100	†6200	485K	TP	290	270	
V11	6V6GT	0	290	†1170	†6200	470K	TP	290	270	
V12	6SC7	TP	†135K	1Meg	1Meg	†135K	0	290	290	
V13	5Y3GT	NC	40K	TP	†350	NC	†40	NC	40K	

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	.01MFD	High side to pin 7 (grid) of 6BE6 (V3). Low side to chassis.	455KC (400∿Mod)	AM	Point of non-interference	DC probe to point Ⓐ. Common to chassis.	A1, A2, A3, A4	Adjust for maximum deflection.
2.	200MMF	High side to AM antenna stator lug on tuning gang. Low side to chassis.	1500KC	"	1500KC	"	A5, A6	"
3.	"	"	600KC	"	600KC	"	A7	Adjust for maximum deflection. Repeat steps 2 and 3.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	.01MFD	High side to pin 2 (grid) of 12AT7 (V2). Low side to chassis.	10.7MC (Unmod)	FM	Point of non-interference	DC probe to point Ⓑ. Common to chassis.	A8, A9, A10, A11, A12, A13	Adjust for maximum deflection.
5.	"	"	"	"	"	DC probe to point Ⓒ. Common to chassis.	A14	"
6.	"	"	"	"	"	DC probe to point Ⓓ. Common to chassis.	A15	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4.	.01MFD	High side to pin 2 (grid) of 12AT7 (V2). Low side to chassis.	10.7MC (450KC Swp)	FM	Point of non-interference	Vert. Amp. to point Ⓑ. Low side to chassis.	A8, A9, A10, A11, A12, A13	Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
5.	"	"	"	"	"	Vert. Amp. thru 100K to point Ⓒ. Low side to chassis.	A14	"
6.	"	"	"	"	"	Vert. Amp. to point Ⓓ. Low side to chassis.	A15	Adjust so that 10.7MC occurs at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A14 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7.	270Ω Carbon Resistor	High side to FM antenna terminal. Low side to chassis.	106MC	FM	106MC	DC probe to point Ⓑ. Common to chassis.	A16, A17	Adjust for maximum deflection.
8.	"	"	90MC	"	90MC	"	L3, L4	Adjust for maximum deflection by compressing or expanding coil turns. Repeat steps 7 and 8.

FIG. 1

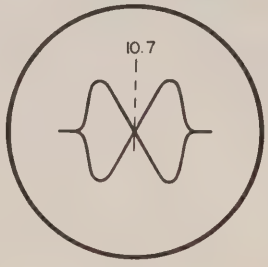


FIG. 2

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	FM RF Amp. -Mixer	12AT7	
V2	FM Osc. -AFC	12AT7	
V3	AM Converter	6BE6	
V4	1st. IF Amplifier	6BA6	
V5	2nd. FM IF Amp. -AM Det.-AVC	6AU6	
V6	Limiter	6AU6	

ITEM No.	USE	TYPE	NOTES
V7	Discriminator	6AL5	
V8	AF Amplifier	12AU7	
V9	AF Amp. -Phase Inv.	12AX7	
V10	Output	6V6GT	
V11	Output	6V6GT	
V12	Mag. Phono Pre-amp.	6SC7	
V13	Rectifier	5Y3GT	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA MASCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	▲20	450	(Note 1)	AFH4-19-10	DO100	FP474.5	TMQ-12	MT-4510	TVL-4832
B	10	450	(Note 1)						
C	■20	450							
D	▲10	450							
C2	16	450		PRS450V16	BR1645	TC74	TD16-450	MT-4516	TVA-1708
C3	20	350		PRS450V20	BR2035	TC65	TD20-350	MT-4520	TVA-1608
C4	10	50		PRS50V10	BBR10-50	TC32	TD10-50	MMT-0510	TVA-1304

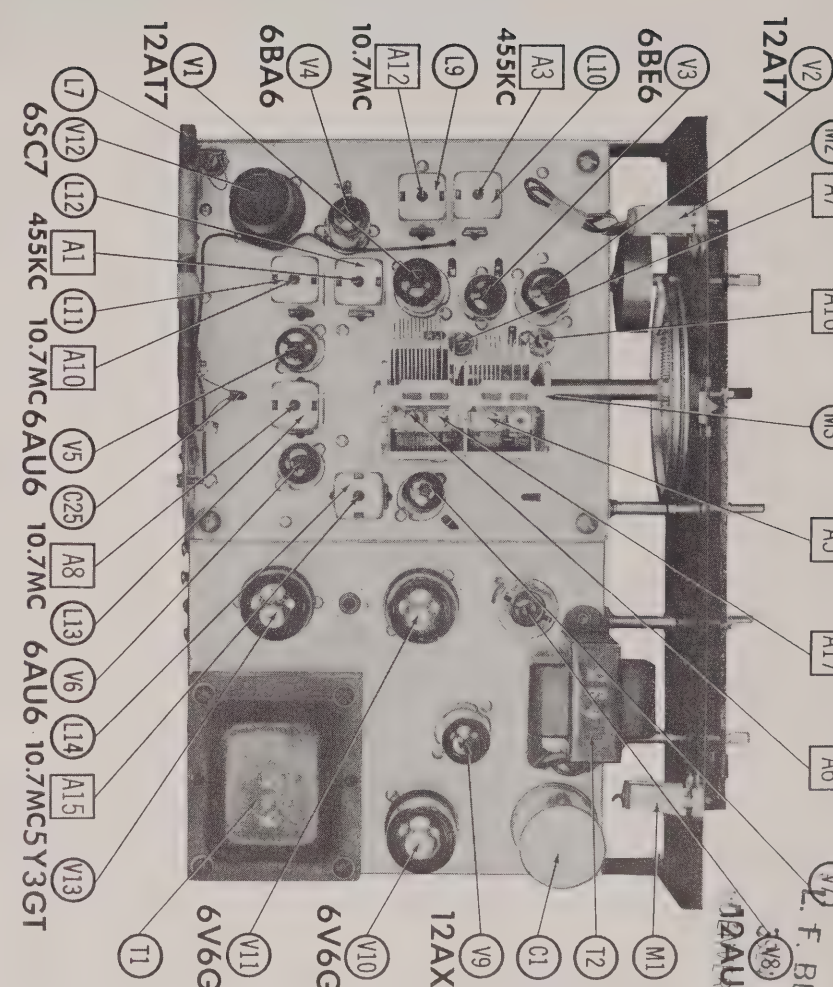
Note 1. Some versions may use 10MFD for C1A and 20MFD for C1B.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA MASCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C5	1000			BPD-001	DD-102	BYA6D1	ED-1000	DC521	5HK-D1	
C6	47			BPD-000047	DD-470	L10Q47	ED-47	UC-5447	5GA-Q47	
C7	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C8	1000			BPD-001	DD-102	BYA6D1	ED-1000	DC521	5HK-D1	
C9	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C10	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	Note 1
C11	100			N750-SI 100	TCN-100	C10T1U	TC7-100	NT-100	5TCU-T1	Note 2
C12	10			BPD-00001	DD-100	L10QI	ED-10	UC-541	5GA-QI	
C13	10			BPD-00001	DD-100	L10QI	ED-10	UC-541	5GA-QI	
C14	4.7			NP0-SI 4.7	TCZ-4R7	C10V47C	TCO-4.7	ZT-5547	5TCCB-V47	
C15	2.2			NP0-SI 2.2	TCZ-2R2	C10V22C	TCO-2.2	ZT-5522	5TCCB-V22	
C16	1000			BPD-001	DD-102	BYA6D1	ED-1000	DC521	5HK-D1	Note 3
C17	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	Note 1
C18	100			N750-SI 100	TCN-100	C10T1U	TC7-100	NT-100	5TCU-T1	
C19	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C20	100			N750-SI 100	TCN-100	C10T1U	TC7-100	NT-100	5TCU-T1	
C21	6.8			NP0-SI 6.8	TCZ-6R8	C10V68C	TCO-6.8	ZT-5568	5TCCB-V68	
C22	1000			BPD-001	DD-102	BYA6D1	ED-1000	DC521	5HK-D1	
C23	47			BPD-000047	DD-470	L10Q47	ED-47	UC-5447	5GA-Q47	
C24	47			BPD-000047	DD-470	L10Q47	ED-47	UC-5447	5GA-Q47	
C25	10			BPD-00001	DD-100	L10QI	ED-10	UC-541	5GA-QI	
C26	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C27	.05	200		BPD-05	DF-503	CUB2S5		GEM-415	2TM-S5	
C28	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C29	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C30	47			BPD-000047	DD-470	L10Q47	ED-47	UC-5447	5GA-Q47	
C31	47			BPD-000047	DD-470	L10Q47	ED-47	UC-5447	5GA-Q47	
C32	1000			BPD-001	DD-102	BYA6D1	ED-1000	DC521	5HK-D1	Note 1
C33	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C34	47			BPD-000047	DD-470	L10Q47	ED-47	UC-5447	5GA-Q47	
C35	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C36	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	Note 1
C37	47			BPD-000047	DD-470	L10Q47	ED-47	UC-5447	5GA-Q47	
C38	1000			BPD-001	DD-102	BYA6D1	ED-1000	DC512	5HK-D1	
C39	.02	600		BPD-02	DD-203	CUB6S2	ED-02	GEM-612	6TM-S2	
C40	220			BPD-00022	DD-221	L10T22	ED-220	UC-5322	5GA-T22	Note 4
C41	.01	600		BPD-01	DD-103	CUB6S1	ED-01	GEM-611	6TM-S1	
C42	.05	600		BPD-05	DF-503	CUB6S5		GEM-615	6TM-S5	
C43	.0033	600		BPD-003	D6-332	CUB6D33	ED-0033	GEM-6233	6TM-D33	
C44	.03	200		BPD-03	DF-303	CUB6S3		GEM-613	2TM-S3	
C45	1000			BPD-001	DD-102	BYA6D1	ED-1000	DC511	5HK-D1	
C46	.01	600		BPD-01	DD-103	CUB6S1	ED-01	GEM-611	6TM-S1	

CHASSIS—TOP VIEW



PROPERTY OF
E. F. BLANKENSHIP
MEADE, KS.

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (cont)

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	MASCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C47	.05	600		BPD-05	DF-503	CUB6S5		GEM-615	6TM-S5	
C48	.05	600		BPD-05	DF-503	CUB6S5		GEM-615	6TM-S5	
C49	.05	600		BPD-05	DF-503	CUB6S5		GEM-615	6TM-S5	
C50	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C51	220			BPD-00022	DD-221	LI0T22	ED-220	UC-5322	5GA-T22	
C52	1000			SI 1000	D6-102	BYA6D1	ED-1000	DC521	5HK-D1	Note 5
C53	2000			BPD-002	DD-202	BYA6D2	ED-002	DC522	5HK-D2	Note 1
C54	.02	600		BPD-02	DD-203	CUB6S2	ED-02	GEM-612	6TM-S2	
C55	.02	600		BPD-02	DD-203	CUB6S2	ED-02	GEM-612	6TM-S2	
C56	220			BPD-00022	DD-221	LI0T22	ED-220	UC-5322	5GA-T22	
C57	.1	600		P688N-1	DF-104	CUB6P1		GEM-601	6TM-P1	

Note 1. Not used in some versions.
Note 2. Some versions may use 1000MMF in this application.
Note 3. Some versions may use 10000MMF in this application.
Note 4. Some versions may use .03MFD in this application.
Note 5. Some versions may use 2000MMF in this application.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	MASCO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	500K	½		BT-66	A47F3-500K	QI3-133X	UT-427	Volume - Tap ⓐ 100K
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
R2A	500K	½		B-60	A47-500K-Z	QI3-133	U48	Bass
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
R3A	500K	½		B-60	A47-500K-Z	QI3-133	U48	Treble
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
C	Switch			KB-1	SWE-12	76-1	US-26	
R4A	50Ω	2		WW-500	A43-50		C50P	Hum Balance - wire wound
B	Shaft			Not Req.	FKS-1/2		Not Req.	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MASCO PART No.	IRC PART No.	
R5	68Ω			BTS-68	
R6	1000Ω			BTS-1000	Note 1
R7	10K			BTS-10K	
R8	1000Ω			BTS-1000	
R9	1000Ω			BTS-1000	
R10	100Ω			BTS-100	
R11	470K			BTS-470K	
R12	560Ω 5%			BTS-560 5%	
R13	27K			BTS-27K	
R14	1Meg			BTS-1Meg	
R15	1Meg			BTS-1Meg	
R16	1000Ω			BTS-1000	
R17	47K			BTS-47K	
R18	470K			BTS-470K	
R19	1000Ω			BTS-1000	
R20	100K			BTS-100K	
R21	15K			BTS-15K	
R22	15K			BTS-15K	
R23	100K			BTS-100K	
R24	100K			BTS-100K	
R25	100K			BTS-100K	
R26	100K			BTS-100K	
R27	4700Ω			BTS-4700	
R28	4700Ω			BTS-4700	
R29	100K			BTS-100K	
R30	10K			BTS-10K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MASCO PART No.	IRC PART No.	
R31	270K			BTS-270K	Note 2
R32	270K			BTS-270K	Note 2
R33	27K			BTS-27K	
R34	470K			BTS-470K	
R35	2200Ω			BTS-2200	
R36	2200Ω			BTS-2200	
R37	470K			BTS-470K	
R38	15K			BTS-15K	
R39	470K			BTS-470K	
R40	3300Ω			BTS-3300	
R41	270Ω	2		BTB-270	
R42	1Meg			BTS-1Meg	
R43	10K			BTS-10K	
R44	100K			BTS-100K	
R45	100K			BTS-100K	
R46	100K			BTS-100K	
R47	27K			BTS-27K	
R48	1Meg			BTS-1Meg	
R49	270K			BTS-270K	
R50	470K			BTS-470K	
R51	680K			BTS-680K	
R52	1Meg			BTS-1Meg	
R53	68K			BTS-68K	
R54	27K			BTS-27K	
R55	47K			BTS-47K	
R56	6200Ω 5%	2		BTB-6200 5%	
R57	5000Ω	8		PW10-5000	

Note 1. 3.3Meg used in some versions.
Note 2. 100K used in some versions.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA					
	PRI.	SEC. 1	SEC. 2	SEC. 3	MASCO PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117VAC ⓐ .83A	630VCT ⓐ .100A	5VAC ⓐ 2A	6.3VAC ⓐ 2.2A SEC. 4 6.3VAC ⓐ 1A	A-10-R					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	MASCO PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	8000Ω CT	16Ω tap ⓐ 8Ω, 4Ω	T-810-R	Z1404			26S59 ①		① Drill new mounting hole.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		MASCO PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	FM Antenna Coil		19-1000		4602	1 Microhenry, IRC part #CLA
L2	RF Choke		19-1000		4602	1 Microhenry, IRC part #CLA
L3	FM RF Coil					
L4	FM Osc. Coil					
L5	Cathode Choke		19-1000		4602	1 Microhenry, IRC part #CLA
L6	RF Choke		19-1000		4602	1 Microhenry, IRC part #CLA
L7	Loop Stick					
L8	AM Osc. Coil					
L9	1st. FM IF	1607-1	16-3487	FM-254	1463	
L10	1st. AM IF	1655-6	16-6758	BC-352	12-C1	
L11	2nd. FM IF	1607-5	16-3487	FM-254	1463	
L12	2nd. AM IF	1655-12	16-6758	BC-353	12-C2	
L13	FM Limiter	1607-1	16-3487	FM-254	1463	
L14	Discriminator	2607-1	17-3494	FM-253	1464	

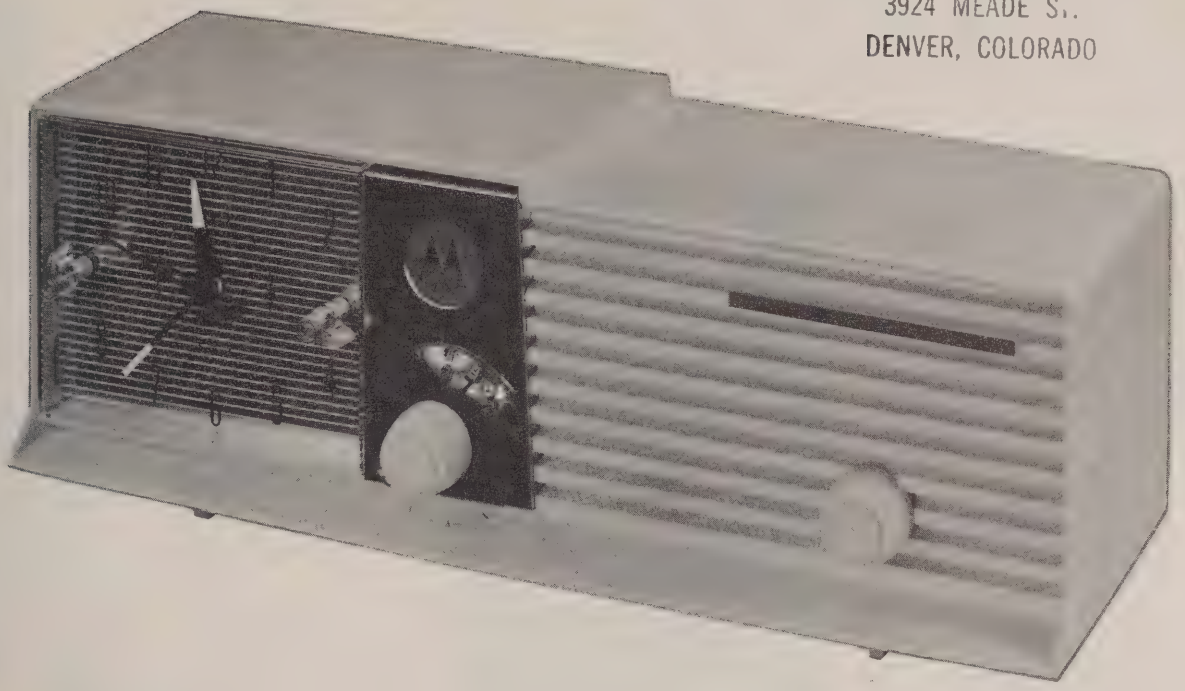
MISCELLANEOUS

ITEM No.	PART NAME	MASCO PART No.	NOTES
M1	Dial Light		#47
M2	Dial Light		#47
M3	Tuning Cap.	1192	4 Gang (AM Sections: 30-531MMF, 28-205MMF)
M4A	Switch		Function Selector (wafer type)
B	Switch		Loudness (wafer type)
M5	Switch		Mag. -Xtal (Slide type, SPDT)

MOTOROLA MODELS 57CD1, A, 57CD2, A, 57CD3, A, 57CD4, A (Ch. HS-528, HS-567)

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

MOTOROLA MODELS 57CD1, A, 57CD2, A, 57CD3, A, 57CD4, A (Ch. HS-528, HS-567)



MOTOROLA MODELS 57CD1, A, 57CD2, A, 57CD3, A, 57CD4, A (Ch. HS-528, HS-567)

TRADE NAME	Motorola Models 57CD1, 57CD2, 57CD3, 57CD4 (Ch. HS-528), 57CD1A, 57CD2A, 57CD3A, 57CD4A (Ch. HS-567)
MANUFACTURER	Motorola Inc., 4545 W. Augusta Blvd., Chicago 51, Ill.
TYPE SET	AC Operated AM Receiver With Electric Clock
TUBES (Five)	Types 12BE6 Converter, 12BA6 IF Amplifier, 12CR6 Det-AVC-AF Amp., 50C5 Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC - 60 Cycles — RATING .23 Amp. @ 117 Volts AC (23 Watts Without Clock)
TUNING RANGE—BROADCAST	535KC - 1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Loop should be maintained in the same relative position to chassis as when the receiver is in cabinet.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400~ Mod)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1620KC	"	"	A5	"
3.		Loop	1400KC	Tune to 1400KC signal.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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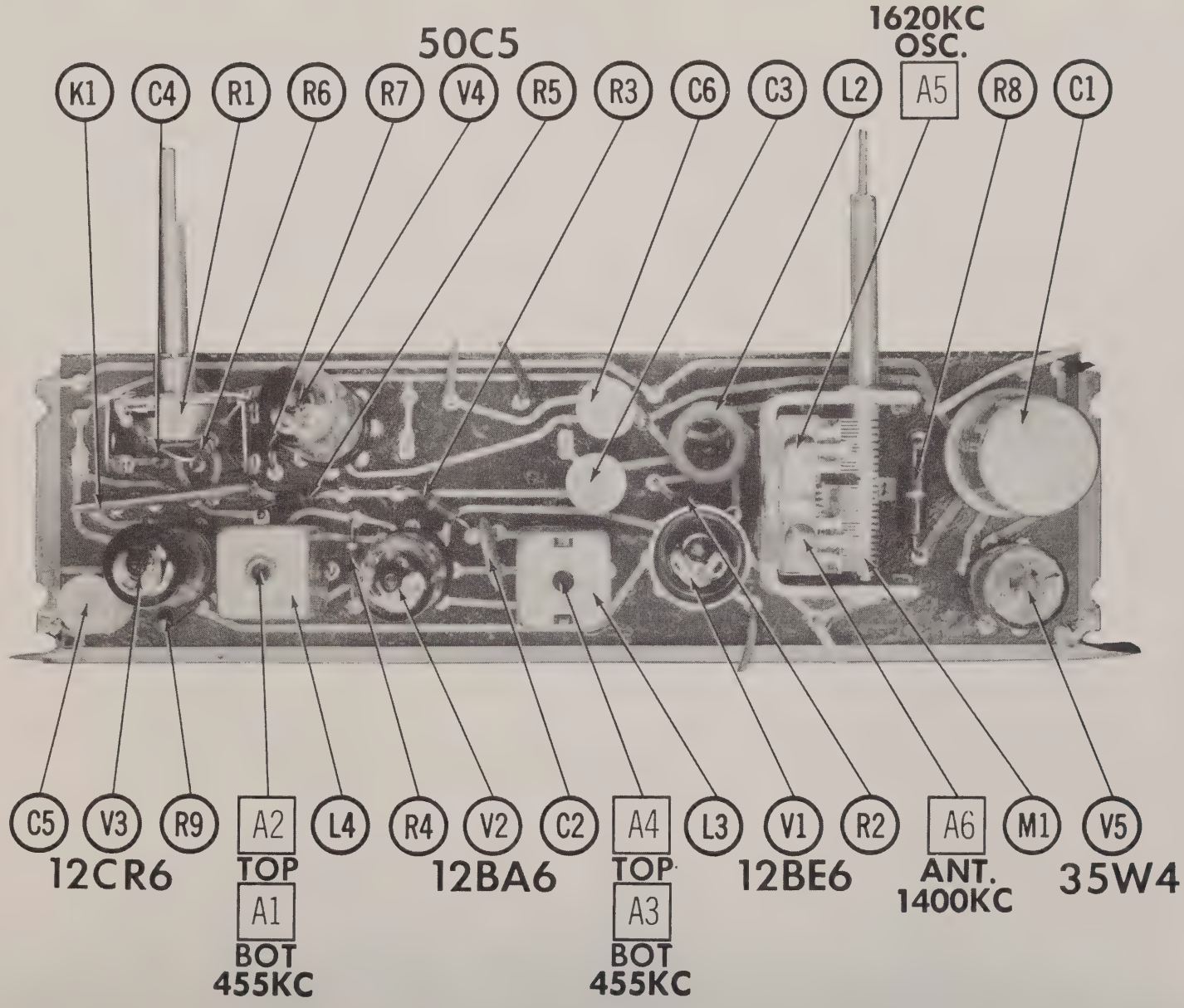

CHASSIS-TOP VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Converter	12BE6	
V2	IF Amplifier	12BA6	
V3	Det-AVC-AF Amp.	12CR6	
V4	Output	50C5	
V5	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	■50	150	23B632015	AFH2-15	BO150	FP213	TMD-12	D-065	TVL-2432
B	▲30	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	10000		21R120853	BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C3	.05	200	8B120842			BC2S47J		ACE6147	2SE-S47	
C4	3000		21K533473	BPD-003	DD-302	BYA10D3	ED-003	UC-523	5HK-D3	
C5	.01	400	8K122334			BC6S1J		ACE611	4SE-S1	Note 1
C6	.01	400	8K122334			BC6S1J		ACE611	4SE-S1	
C7	.047	400	8K490232	BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	

Note 1: Some versions may use .05MFD in this application. (Part #8K121268)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	MOTOROLA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	500K	½	18B635947					Volume Tap ② 250K

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MOTOROLA PART No.	IRC PART No.	
R2	22K		6R6028	BTS-22K	
R3	22K		6R6028	BTS-22K	
R4	100Ω		6R6326	BTS-100	
R5	3.3Meg		6R2118	BTS-3.3Meg	
R6	27K		6R6434	BTS-27K	
R7	150Ω		6R3992	BTS-150	
R8	1200Ω	1	6K125169	BTA-1200	Note 1
R9	390Ω		6K125545	BTS-390	Note 2

Note 1: 1000Ω, 1 W used in some versions. (Part #6B119404)
Note 2: Not used in some versions.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	MOTOROLA PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2700Ω	3-4Ω	25K635954	Z1103 ①②	A-3025	A-3332	22S45 ①	S-12X ①	① Drill new mtg. hole. ② Tape tap on primary winding.

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	MOTOROLA PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	50C635953 ①	4A07	① Includes T1.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		MOTOROLA PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Ant.	1V636044				Includes Cabinet Back, Line Cord
L2	Osc. Coil	24K636206				
L3	Input IF	24K636016				
L4	Output IF	24K635929				

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	MOTOROLA PART No.	REPLACEMENT DATA
K1	Det. -Audio Net.	5000MMF, 250MMF, 500MMF, 5000MMF, 470K, 100K, 470K, 2.2Meg	51B635924	

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M1	Tuning Cap.	19C635930	Two Gang
M2	Clock Ass'y.	72D635686	Telechron
	Clock Ass'y.	72D636664	New Haven
	Crystal	61C635805	Dial
	Bezel	13C635806	
	Knob	36C635812	Clock
	Knob	36B635811	Dial Scale
	Knob	36K636713	Tuning, Mahogany, Model 57CD1.
	Knob	36K635816	Tuning, Pink, Model 57CD2.
	Knob	36K635814	Tuning, Antique White, Models 57CD2A, 57CD3 and some 57CD2.
	Knob	36K635818	Tuning, Blue, Model 57CD3.
	Knob	36K635820	Tuning, Turquoise, Model 57CD4.
	Knob	36K636712	Volume, Mahogany, Model 57CD1.
	Knob	36K635815	Volume, Pink, Model 57CD2
	Knob	36C635813	Volume, Antique White, Models 57CD2A, 57CD3 and some 57CD2.
	Knob	36K635817	Volume, Blue, Model 57CD3.
	Knob	36K635819	Volume, Turquoise, Model 57CD4.
	Cabinet	1V636058	Mahogany, Model 57CD1.
	Cabinet	1V636059	Model 57CD2.
	Cabinet	1V636060	Model 57CD3.
	Cabinet	1V636061	Model 57CD4.

PROPERTY OF
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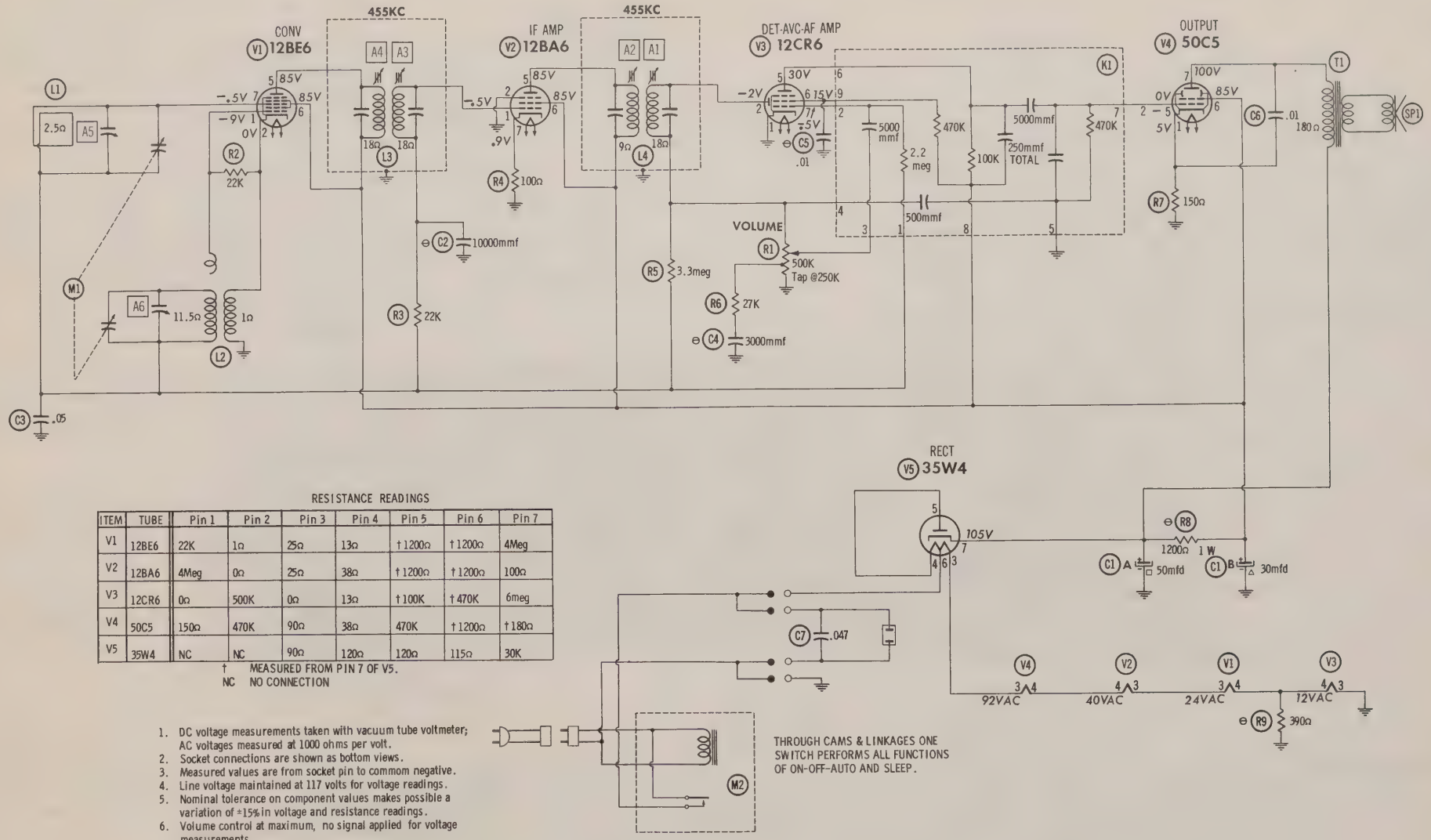
3924 MEADE St.
DENVER, COLORADO



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	1Ω	25Ω	13Ω	†1200Ω	†1200Ω	4Meg
V2	12BA6	4Meg	0Ω	25Ω	38Ω	†1200Ω	†1200Ω	100Ω
V3	12CR6	0Ω	500K	0Ω	13Ω	†100K	†470K	6meg
V4	50C5	150Ω	470K	90Ω	38Ω	470K	†1200Ω	†180Ω
V5	35W4	NC	NC	90Ω	120Ω	120Ω	115Ω	30K

† MEASURED FROM PIN 7 OF V5.
NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to commom negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

THROUGH CAMS & LINKAGES ONE SWITCH PERFORMS ALL FUNCTIONS OF ON-OFF-AUTO AND SLEEP.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

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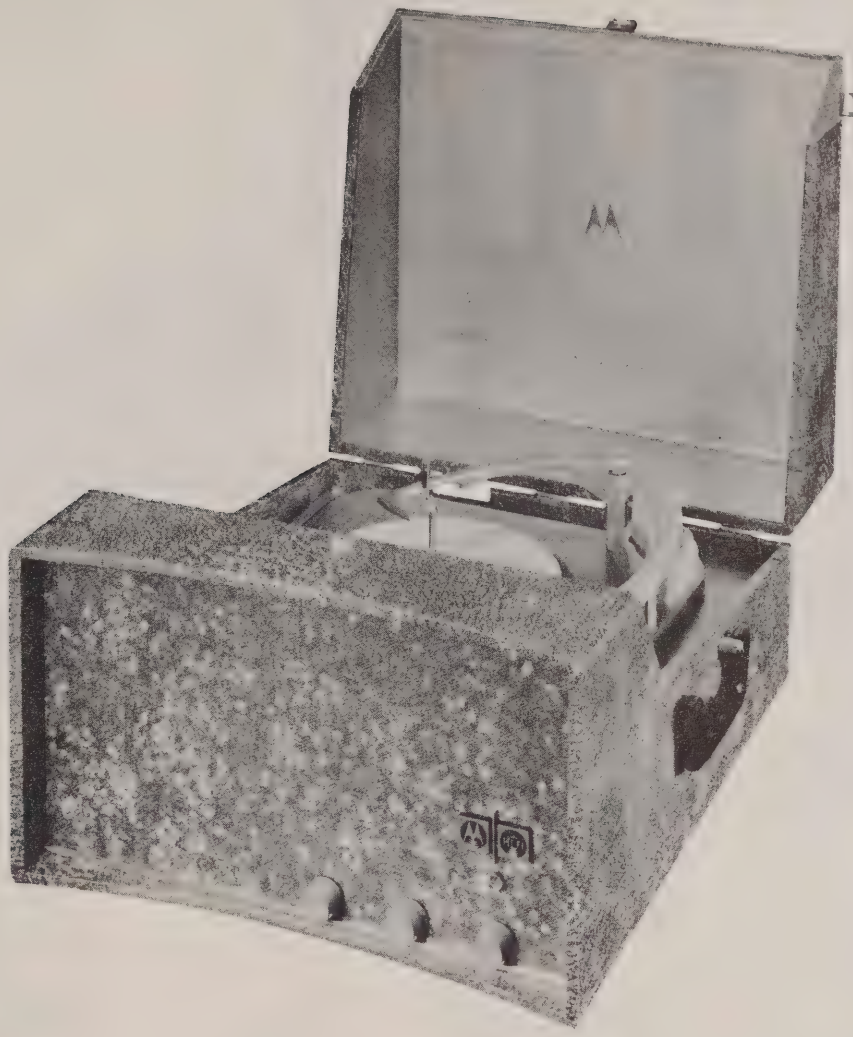
MOTOROLA MODELS
57HFP1, 57HFP2 (Ch. HS-543)

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

MOTOROLA MODELS
57HFP1, 57HFP2 (Ch. HS-543)



MOTOROLA MODELS
57HFP1, 57HFP2 (Ch. HS-543)

TRADE NAME	Motorola Models 57HFP1, 57HFP2 (Ch. HS-543)
MANUFACTURER	Motorola, Inc., 4545 W. Augusta Blvd., Chicago 51, Ill.
TYPE SET	AC Operated Phono Amplifier With 4 Speed Automatic Record Changer
TUBES (Four)	Types 12AV6 AF Amplifier, 12AX7 AF Amp.-Phase Inv., (2) 50C5 Output
POWER SUPPLY	110-120 Volts AC-60 Cycles RATING .36 Amp. @ 117 Volts AC (30 Watts)

RECORD CHANGER MODEL W11RC

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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PARTS LIST AND DESCRIPTIONS

MOTOROLA
MODEL 57HFP1 (Ch. HS-543)

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	AF Amplifier	12AV6	
V2	AF Amp. -Phase Inv.	12AX7	

ITEM No.	USE	TYPE	NOTES
V3	Output	50C5	
V4	Output	50C5	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	■40	150	23B632092	AFH3-10	CO090	FP311.5	TMT-9	T-045	TVL-3440
B	▲40	150							
C	30	150							
C2	50	10	23B636685	SRE12V50	BBR50-25	TC29	TD-50-25	FM-0250	TVA-1206

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C3	10000		21R482726	BPD-01	DD-103	BYA6S1	GP-10000	DC511	5HK-S1	
C4	.02	400	8R121003	BPD-02	DD-203	CUB4S2	ED-02	GEM-412	4TM-S2	
C5	2000		21R121106	BPD-002	DD-202	BYA10D2	ED-2000	UC-522	5GA-D2	
C6	.02	200	8R121003	BPD-02	DD-203	CUB4S2	ED-02	GEM-412	4TM-S2	
C7	220		21R410115	BPD-00022	DD-221	L10T22	ED-220	UC-5322	5GA-T22	
C8	2000		21R121106	BPD-002	DD-202	BYA10D2	ED-2000	UC-522	5GA-D2	
C9	.05	400	8R121567	BPD-05	DF-503	CUB4S5		GEM-415	4TM-S5	
C10	.05	400	8R121567	BPD-05	DF-503	CUB4S5		GEM-415	4TM-S5	
C11	5000		21R122871	BPD-005	DD-502	BYA6D5	GP-5000	DC525	5HK-D5	
C12	5000		21R122871	BPD-005	DD-502	BYA6D5	GP-5000	DC525	5HK-D5	
C13	.15	200	8R122258	P288N-15		CUB4P15		GEM-4015	2TM-P15	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	MOTOROLA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	2Meg	½	18K636722	B-76*	A47-2Meg-Z*	Q13-139 *	U55 *	Volume (200K Stop)
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
R2A	2Meg	½	18K636346	B-76	A47-2Meg-Z	Q13-139	U55	Bass
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
R3A	2Meg	½	18K636346	B-76	A47-2Meg-Z	Q13-139	U55	Treble
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	

* Connect 200K resistor in series with right hand terminal, viewed from shaft end, terminals down.

RESISTORS

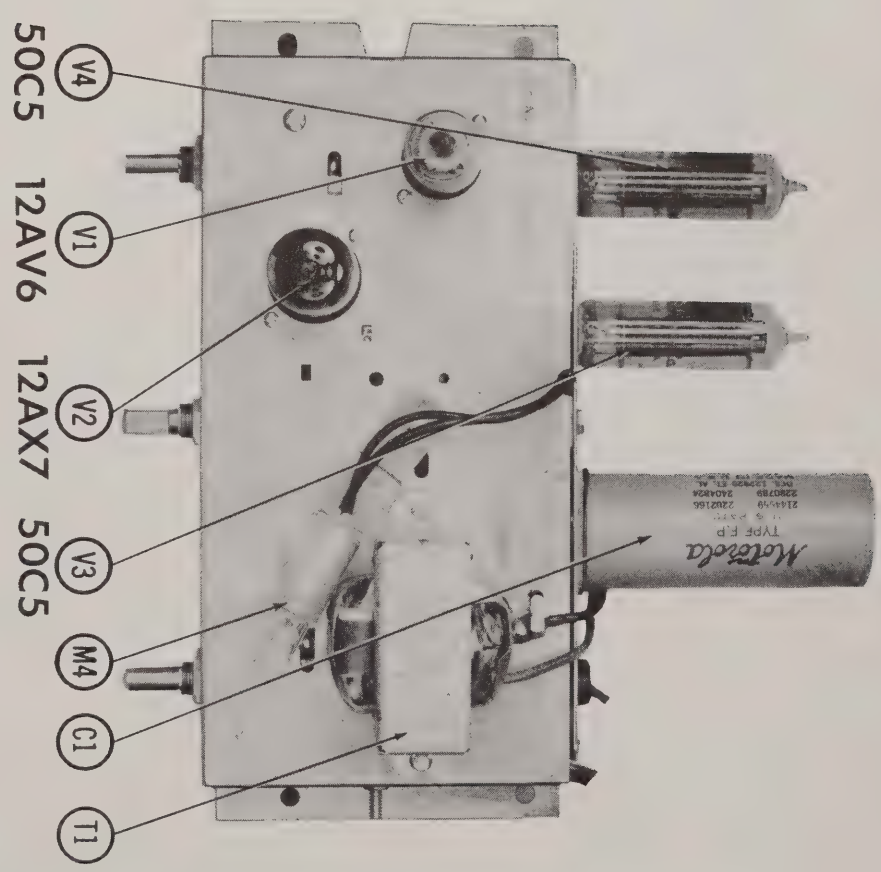
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MOTOROLA PART No.	IRC PART No.	
R4	39K		6R6487	BTS-39K	
R5	470K		6R6377	BTS-470K	
R6	68K		6R6074	BTS-68K	Note 1
R7	3300Ω			BTS-3300	Note 2
R8	220K		6R6407	BTS-220K	
R9	22K		6R6397	BTS-22K	
R10	100K		6R6031	BTS-100K	
R11	4700Ω		6R6080	BTS-4700	
R12	100K		6R6031	BTS-100K	
R13	4700Ω		6R6080	BTS-4700	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MOTOROLA PART No.	IRC PART No.	
R14	220K		6R6407	BTS-220K	
R15	330K		6R2096	BTS-330K	
R16	220K		6R6407	BTS-220K	
R17	68Ω		6R2039	BTS-68	
R18	56Ω		6R5614	BTS-56	
R19	1800Ω		6R3964	BTS-1800	
R20	4700Ω		6R6080	BTS-4700	
R21	22Ω	4	65B630362	PW4-20	
R22	68K		6R6074	BTS-68K	

Note 1. 220K used in some versions (Part #6R6407).
Note 2. 8200Ω used in some versions (Part #6R5725).

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	MOTOROLA PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	3600Ω CT	3-4Ω	25K636482	Z1002	A-2901	A-3823	24S61	S-53X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	MOTOROLA PART No.	QUAM PART No.	
SP1	4"	PM	6-8Ω	50K636329 ①	4A07Z8 ①	① Connect in series and phase
SP2	4"	PM	6-8Ω	50K636688 ①	4A07Z8 ①	
SP3	6"	PM	3-4Ω	50K636328	6A1	

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA						NOTES
	CURRENT	MOTOROLA PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	MALLORY PART No.	RADIO RECEPTOR PART No.	SARKES TARZIAN PART No.	
M1	.089A	48K482807	1005A	RS150	6S150	5P1	150	

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA					REMARKS
	MOTOROLA PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	MOUNT	
M2				56	PT-2	

PHONO NEEDLE

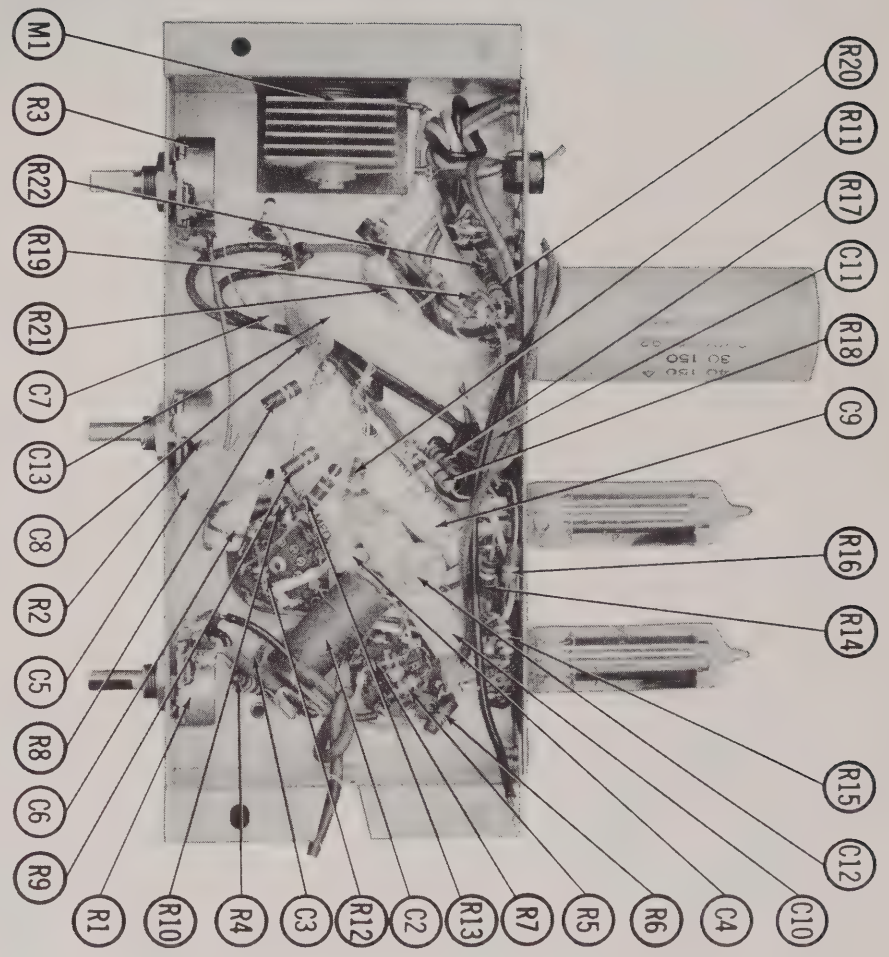
(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	MOTOROLA PART No.	JENSEN PART No.	WALCO PART No.	
M3				

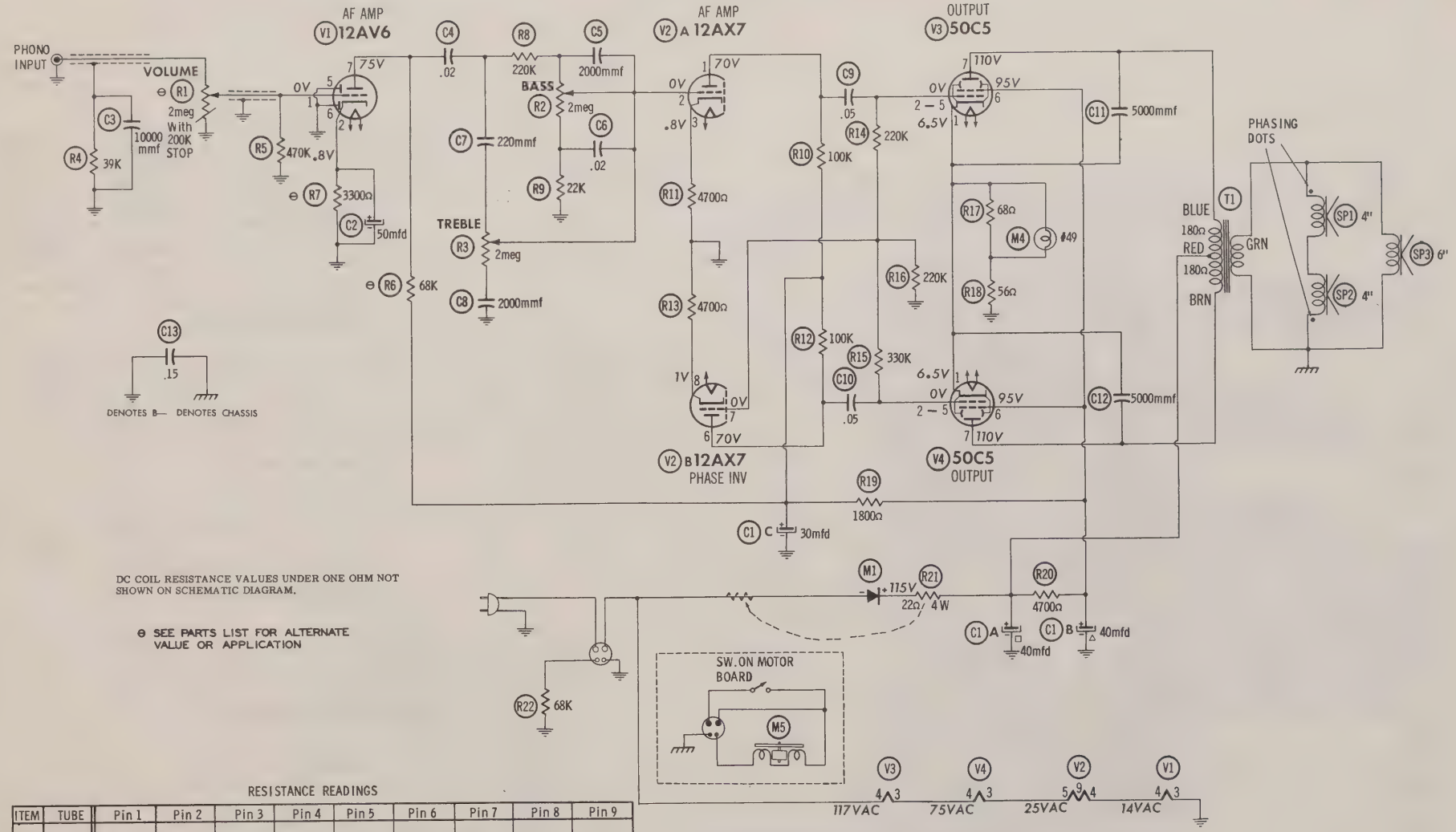
MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M4	Pilot Light	65X77646	#49
M5	Phono Motor		
	Handle	55K636294	Black, Model 57HFP2
	Handle	55K636334	Tan, Model 57HFP1
	Knob	36K636324	Volume
	Knob	36K636322	Treble
	Knob	36K636323	Bass
	Cabinet	16K636331	Charcoal gray, Model 57HFP2
	Cabinet	16E636330	Tan, Model 57HFP1

CHASSIS—BOTTOM VIEW



MOTOROLA MODEL 57HFP1 (Ch. HS-543)



DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AV6	140K	3300Ω	0Ω	14Ω	0Ω	0Ω	†75K		
V2	12AX7	†105K	22K	4700Ω	14Ω	27Ω	†105K	220K	4700Ω	20Ω
V3	50C5	65Ω	440K	85Ω	130Ω	440K	†4700Ω	†200Ω		
V4	50C5	65Ω	550K	27Ω	85Ω	550K	†4700Ω	†200Ω		

† MEASURED FROM OUTPUT OF M1.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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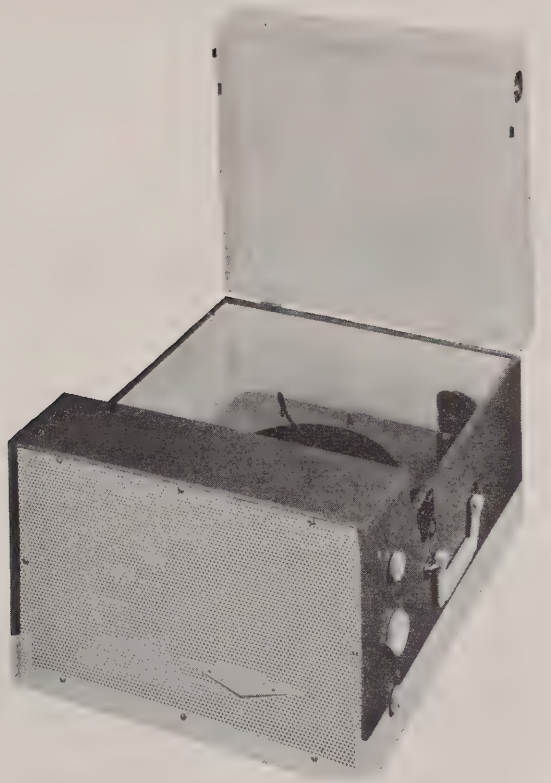
PHILCO
MODEL E-1370



PHILCO
MODEL E-1370

TRADE NAME	Philco Model E-1370
MANUFACTURER	Philco Corp., Tioga & "C" Sts., Philadelphia, Pa.
TYPE SET	AC Operated AM Receiver With 3 Speed Automatic Record Changer
TUBES (Five)	Types 12BE6 Converter, 12BA6 IF Amplifier, 12AV6 Det.-AVC-AF Amp., 50C5 Output, 35W Rectifier
POWER SUPPLY	105-125 Volts AC-60 Cycles
RATING	.27 Amp. @ 117 Volts AC (27 Watts Without Motor)
TUNING RANGE—BROADCAST	540KC - 1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Loop should be maintained in the same relative position to chassis as when the receiver is in cabinet.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400∿Mod)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1620KC	1620KC	"	A5	With tuning gang fully open, place a .006 inch non-metallic shim between top of stator plates and heel of rotor. Close tuning gang. Carefully remove shim without disturbing setting of gang. Adjust A5 for maximum output.
2.		"	1500KC	1500KC	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

PHILCO RECORD CHANGER - MODEL M-38

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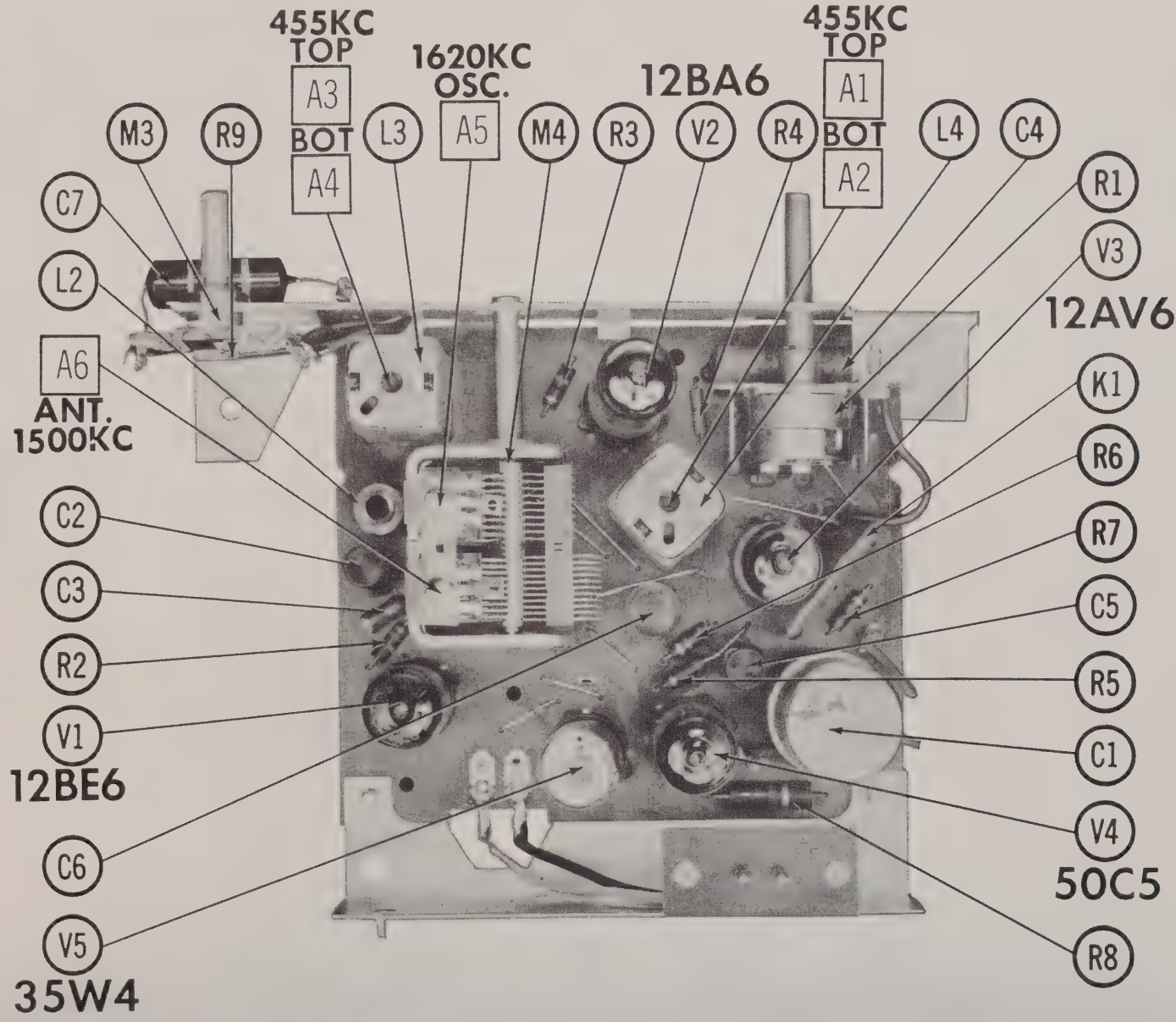


CHASSIS-TOP VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Converter	12BE6	
V2	IF Amplifier	12BA6	
V3	Det. -AVC-AF Amp.	12AV6	
V4	Output	50C5	
V5	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA PHILCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	30	150	30-2585-2	AFH3-08	B0100				R2380 *
B	▲25	150			BR2515				
C	■20	150							

* Non-catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	.01	400	30-4685-41	BPD-01	DD-103	BC6S1J	GP-10000	ACE611	4TM-S1	N220
C3	7.5		30-1224-83							
C4	.047	200	30-4650-45	BPD-05	DF-503	CUB2S47		GEM-4147	2TM-S47	
C5	.01	400	30-4685-41	BPD-01	DD-103	BC6S1J	GP-10000	ACE611	4SE-S1	
C6	.047	400	30-4685-45	BPD-05	DF-503	BC6S47J		ACE6147	4SE-S47	
C7	.047	400	30-4650-45	BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA PHILCO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1	2Meg	½	33-5575-9					Volume & Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA PHILCO PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R2	22K		66-3228340	BTS-22K	
R3	68Ω		66-0688340	BTS-68	
R4	2.2Meg		66-5228340	BTS-2.2Meg	
R5	150Ω		66-1158340	BTS-150	
R6	150Ω		66-1158340	BTS-150	
R7	1000Ω	1	66-2108340	BTS-1000	
R8	220Ω		66-1224340	BTA-220	
R9	680K		66-4688340	BTS-680K	
R10	1Meg		66-5108340	BTS-1Meg	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA PHILCO PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	2400Ω	3-4Ω	32-8384-2	Z1101	A-3025	A-3332	26S58 ①	S-12X	① Drill new mounting hole.

SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA PHILCO PART No.	REPLACEMENT DATA QUAM PART No.	NOTES
SP1	4"	PM	3-4Ω	36-1654-19	4A07	

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA PHILCO PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L1	Loop Sitck	32-4692-1				
L2	Osc. Coil	32-4693-4				
L3	Input IF	32-4583-10	16-6780	BC-356	13-PC1	
L4	Output IF	32-4583-11	16-6780	BC-357	13-PC2	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	PHILCO PART No.	REPLACEMENT DATA
K1	Det. -Audio Net.	5000MMF, 5000MMF, 220MMF, 250MMF, 6.8Meg, 470K, 470K	30-6006-1	Aerovox PA-512 Centralab PC-158 Sprague DT-5

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA PHILCO PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. MOUNT	REMARKS
M1	325-8021 ①			56	PT-1	① Includes needles

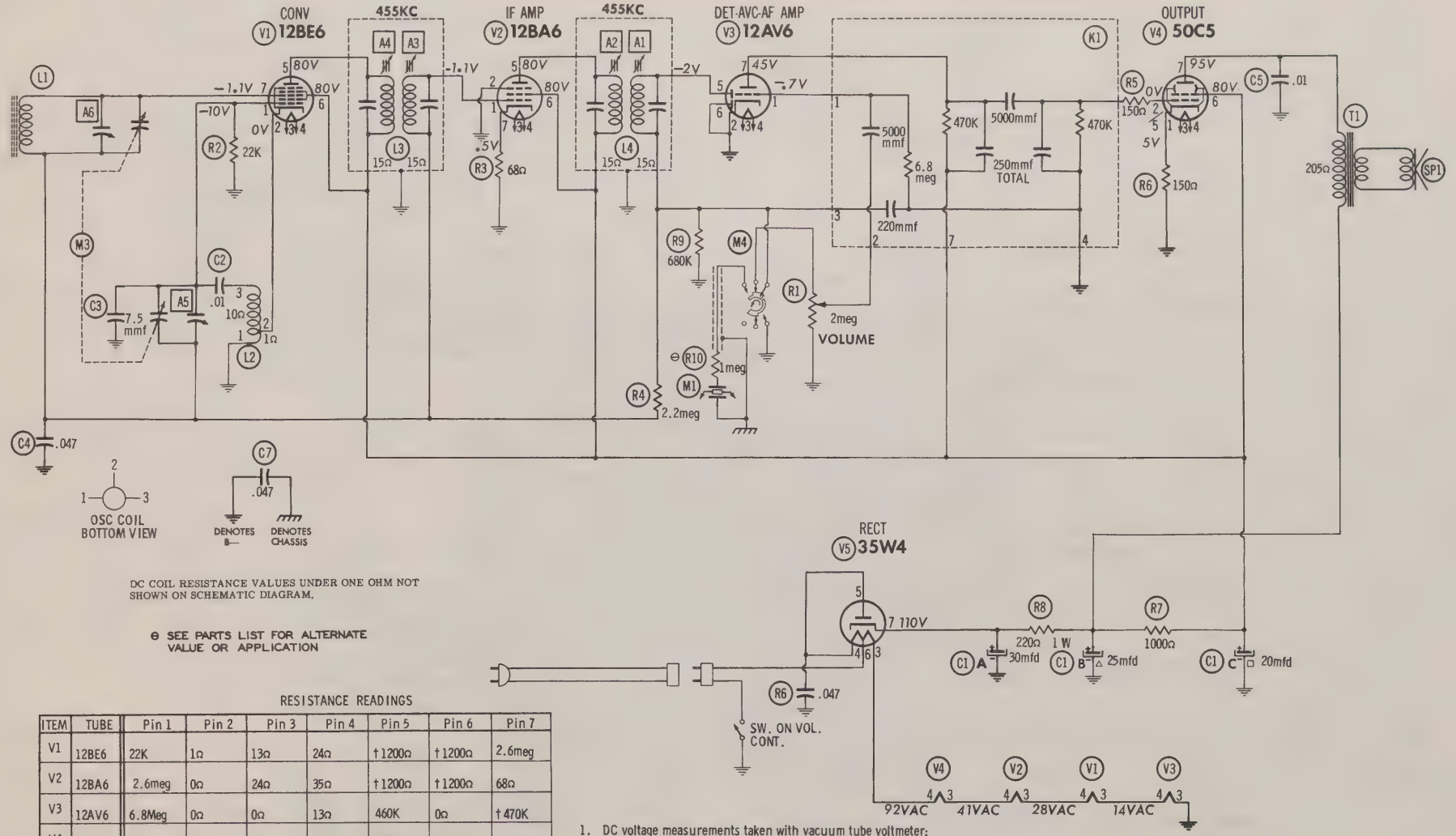
PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA PHILCO PART No.	JENSEN PART No.	WALCO PART No.	REMARKS
M2	325-8015-1 (78 RPM)	†CRA55 or ♦CRA55D	†W-64S	† Jewel ♦ Diamond
	325-8015 (33 1/3 - 45 RPM)	†CRA55LP or ♦CRA55LPD	†W-64MGS	

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M3	Tuning Cap.	31-2783-4	2 Gang (Ant. Section 20-300MMF)
M4	Switch	42-2058-1	Radio-Phono, Rotary, wafer type
	Printed Board	54-6280-2	
	Handle	54-5210-8	
	Knob	54-6095-4	On-off-volume, Function switch
	Knob	54-6156-16	Tuning



DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	1Ω	13Ω	24Ω	†1200Ω	†1200Ω	2.6meg
V2	12BA6	2.6meg	0Ω	24Ω	35Ω	†1200Ω	†1200Ω	68Ω
V3	12AV6	6.8Meg	0Ω	0Ω	13Ω	460K	0Ω	†470K
V4	50C5	150Ω	470K	35Ω	82Ω	470K	†1200Ω	†420Ω
V5	35W4	TP	TP	82Ω	115Ω	115Ω	110Ω	20K (Min)

ALL MEASUREMENTS TAKEN WITH "RADIO-PHONO" SW. IN "RADIO" POSITION.
† MEASURED FROM PIN 7 OF V5.
TP TIE POINT

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to commom negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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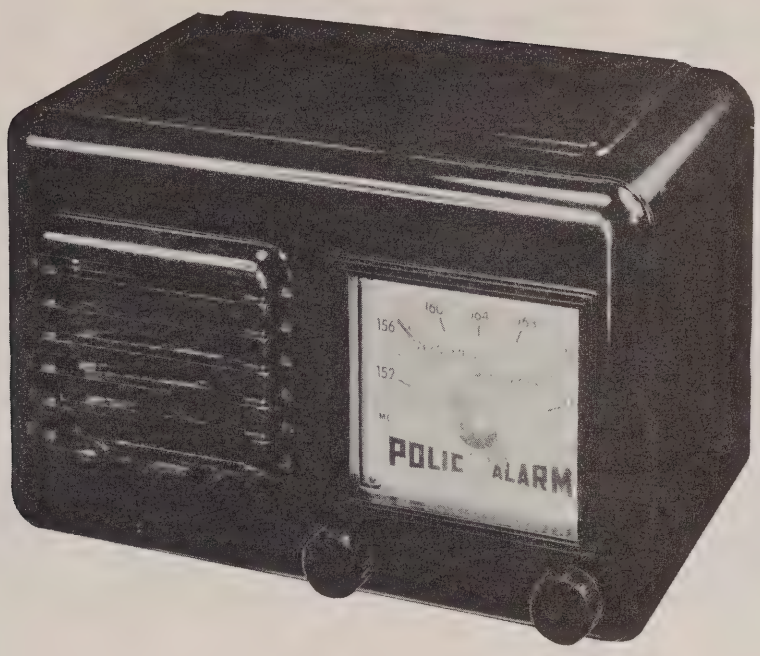
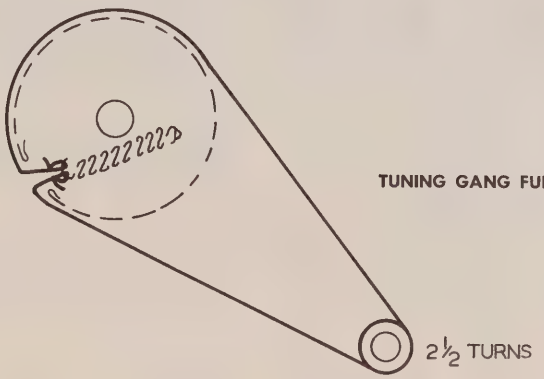
POLICALARM
MODEL PR-9



POLICALARM
MODEL PR-9

TRADE NAME	Policalarm Model PR-9
MANUFACTURER	Monitoradio Div., L. D. E. A., Inc., 7900 Pendleton Pike, Indianapolis, Indiana
TYPE SET	AC-DC Operated FM Receiver
TUBES (Six)	Types 12AT7 Mixer-Osc., 6BJ6 1st IF Amplifier, 6BJ6 2nd IF Amplifier, 19T8 Ratio Det.-AF Amp., 35C5 Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE	FM 152MC - 174MC RATING . 29 Amp. @ 117 Volts AC (28 Watts)



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PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Mixer-Osc.	12AT7	
V2	1st IF Amplifier	6BJ6	
V3	2nd IF Amplifier	6BJ6	

ITEM No.	USE	TYPE	NOTES
V4	Ratio Det. -AF Amp.	19T8	
V5	Output	35C5	
V6	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	POLICALARM PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	50	150		PRS150/25V	BBRT5315C	TCT3107	TDLT-15	FMT327	TVA-3430
B	30	150	300-061-2	5030/20					
C	20	25							
C2	2	50	300-109-1	PRS50V2	BBR2-50	TC302	TD2-50	MT0502	TVA-1301

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

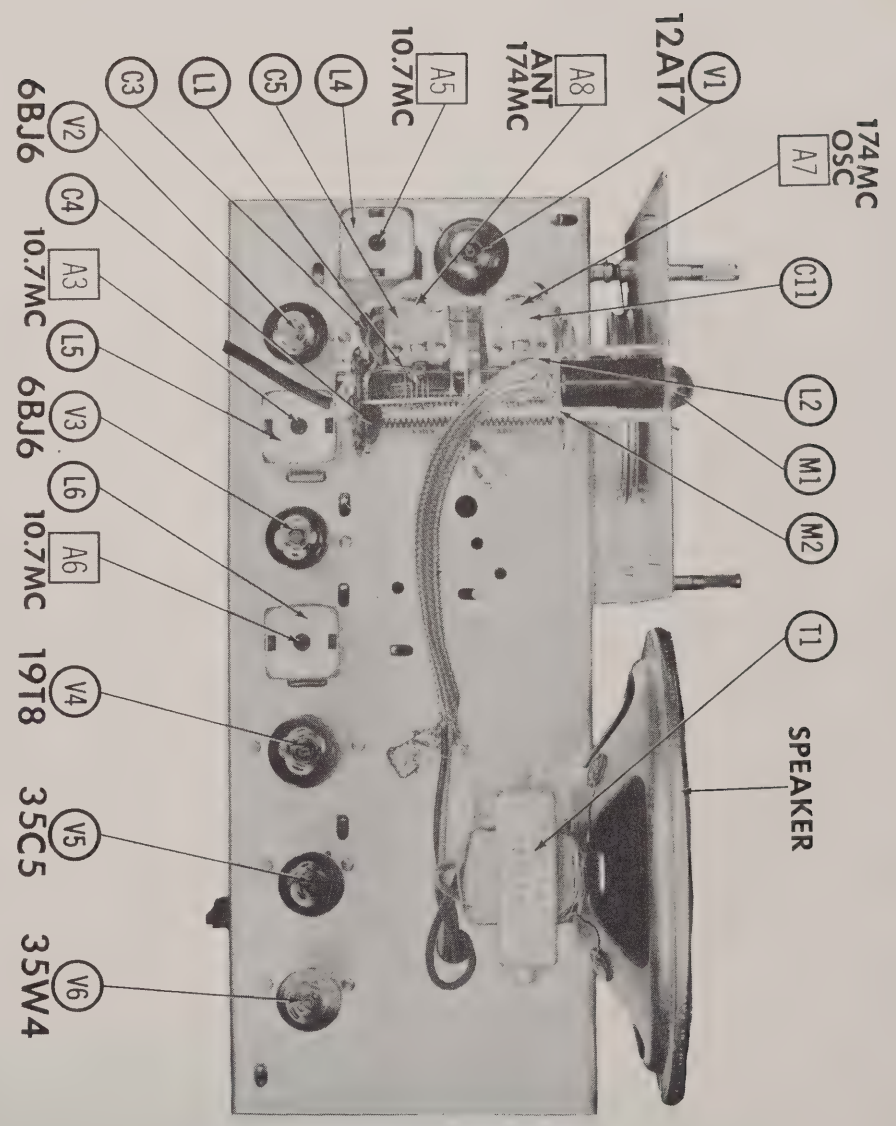
ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	POLICALARM PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C3	56			BPD-000056	DD-560	L10Q56	ED-56	UC-5456	5GA-Q56	
C4	5000		JCD-C4	BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C5	3-13		TS2A-N300							
C6	5			SI 5	D6-050	LT6V5	ED-5	ZT-555	5GA-V5	Note 1
C7	4.7			NP0-SI 4.7	TCZ-4R7	C10V47C	TCO-4.7	ZT-5547	5TCCB-V47	Note 1
C8	5000		JCD-C4	BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C9	27		100-203-2	N750-SI 27	TCN-27	C10Q27U	TC7-27			
C10	2.7		100-203-1				TC7-2.2			
C11	3-13		TS2A-N300							
C12	5000		JCD-C4	BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C13	5000		JCD-C4	BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C14	5000		JCD-C4	BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C15	5000		JCD-C4	BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C16	10000		JCD-D7	BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C17	5000		JCD-C4	BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C18	100		PQ	1469-0001		22R5T1	CY15C101J	MC235	MS-31	
C19	100		PQ	1469-0001		22R5T1	CY15C101J	MC235	MS-31	
C20	.01	400		BPD-01	DD-103	CUB4S1	ED-01	GEM-411	4TM-S1	
C21	1000			BPD-001	DD-102	BYA6D1	ED-1000	DC521	5HK-D1	
C22	470			SI 470	D6-471	L6T6T47	ED-470	UC-5347	5GA-T47	
C23	10000		JCD-D7	BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C24	10000		JCD-D7	BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C25	270			BPD-00027	DD-271	L10T27	ED-270	UC-5327	5GA-T27	
C26	270			BPD-00027	DD-271	L10T27	ED-270	UC-5327	5GA-T27	
C27	270			BPD-00027	DD-271	L10T27	ED-270	UC-5327	5GA-T27	
C28	10000		JCD-D7	BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	

Note 1: Not used in some versions.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	POLICALARM PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	1Meg	½	100-093-4	B-70	A47-1Meg-Z	Q13-137	U53	Volume
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			KB-1	SWE-12	76-1	US-26	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	POLICALARM PART No.	IRC PART No.	
R2	1000Ω			BTS-1000	
R3	10K			BTS-10K	
R4	1000Ω			BTS-1000	
R5	470Ω			BTS-470	
R6	82Ω			BTS-82	
R7	470Ω			BTS-470	
R8	220K			BTS-220K	
R9	82Ω			BTS-82	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	POLICALARM PART No.	IRC PART No.	
R10	47K			BTS-47K	
R11	10Meg			BTS-10Meg	
R12	47K			BTS-47K	
R13	470K			BTS-470K	
R14	1000Ω	1		BTA-1000	
R15	150Ω	1		BTA-150	
R16	1000Ω	1		BTA-1000	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	POLICALARM PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2900Ω tapped	3-4Ω	Part of spkr. (300-071-2)	Z1105	A-3031	A-3336	24S50A	S-16X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	POLICALARM PART No.	QUAM PART No.	
SP1	5"	PM	3-4Ω	300-071-2 ①	5AIR ②	① Includes T1. ② Fabricate mounting.

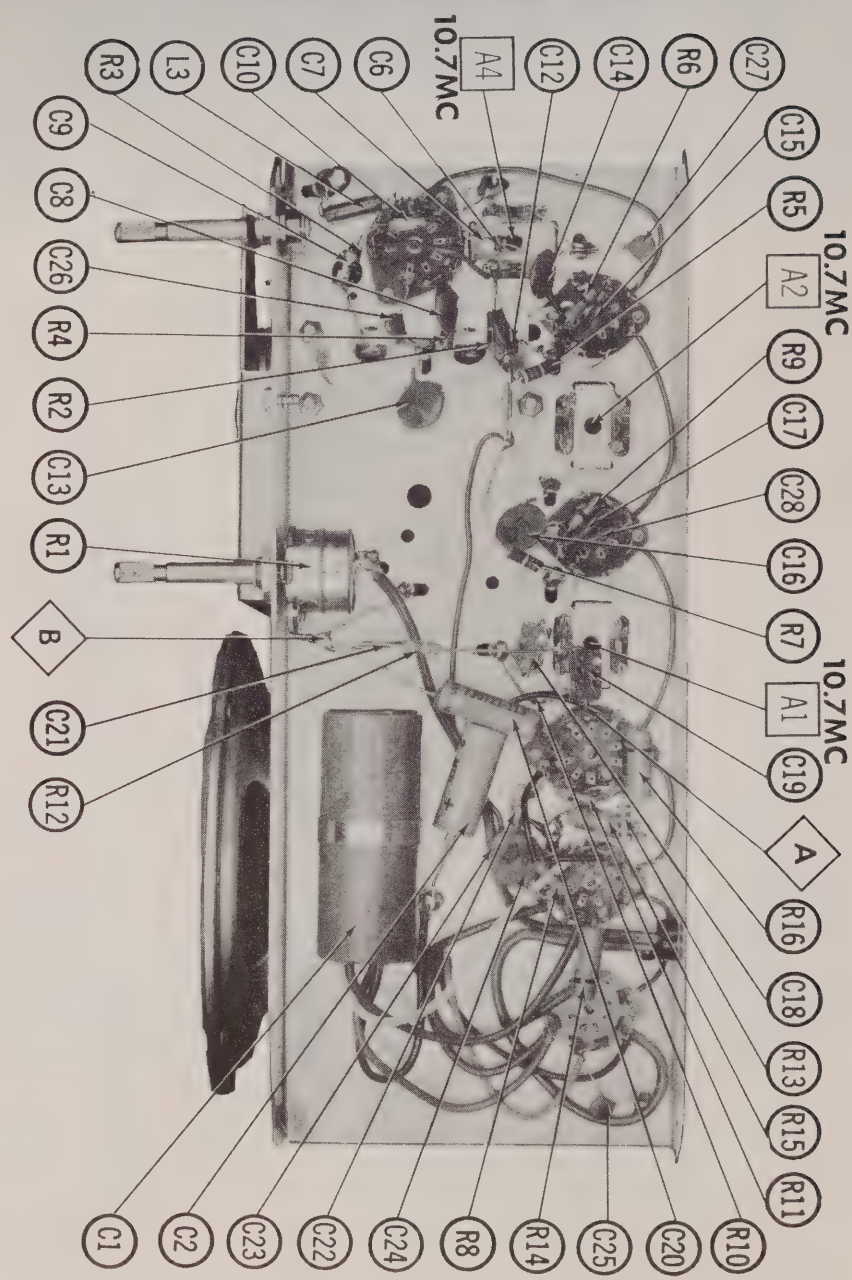
COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		POLICALARM PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Coil	300-073-3				
L2	Osc. Coil	300-073-4				
L3	Cathode Choke	Type CLA	19-1000		4602	1 Microhenry
L4	Input IF	300-077-2	16-3487	FM-254	1463	
L5	Output IF	300-077-2	16-3487	FM-254	1463	
L6	Ratio Det.	550-000	17-3494	FM-255	1465	

MISCELLANEOUS

ITEM No.	PART NAME	POLICALARM PART No.	NOTES
M1	Pilot Light		#51
M2	Tuning Cap.	300-060-3	Two Gang
	Dial Glass	No. 135	
	Pointer	1774E	
	Knob	No. 200	2 Used
	Cabinet Grill	No. 36-2	
	Cabinet	No. 29-9A	

CHASSIS—BOTTOM VIEW



ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
To set pointer, turn tuning capacitor fully closed and set pointer parallel with base of dial.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100K (±1%) resistors in series from point (A) to chassis. The junction of these two resistors is alignment point (C) as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	.01MFD	High side to "1" on antenna strip. Low side to "2" antenna strip.	10.7MC (unmod)	Point of non-interference.	DC probe to point (A). Common to chassis.	A1, A2, A3, A4, A5	Adjust for maximum deflection.
2.	"	"	"	"	DC probe to point (B). Common to point (C).	A6	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
1.	.01MFD	High side to "1" on antenna strip. Low side to "2" on antenna strip.	10.7MC (450KC Swp)	Point of non-interference.	Vert. amp. to point (A). Low side to chassis.	A1, A2, A3, A4, A5	Disconnect stabilizing capacitor C2. Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
2.	"	"	"	"	Vert. amp. to point (B). Low side to chassis.	A6	Reconnect stabilizing capacitor C2. Adjust so that 10.7MC occurs at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A5 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
3.	Direct	High side to "1" on antenna strip. Low side to "2" on antenna strip.	174MC	174MC	DC probe to point (A). Common to chassis.	A7, A8	Adjust for maximum deflection.
4.	"	"	152MC	152MC	"	L1, L3	Adjust for maximum deflection by compressing or expanding coil turns.

FIG. 1

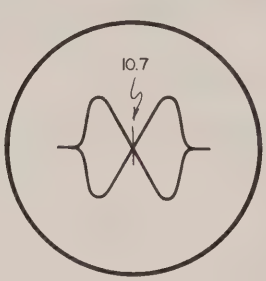
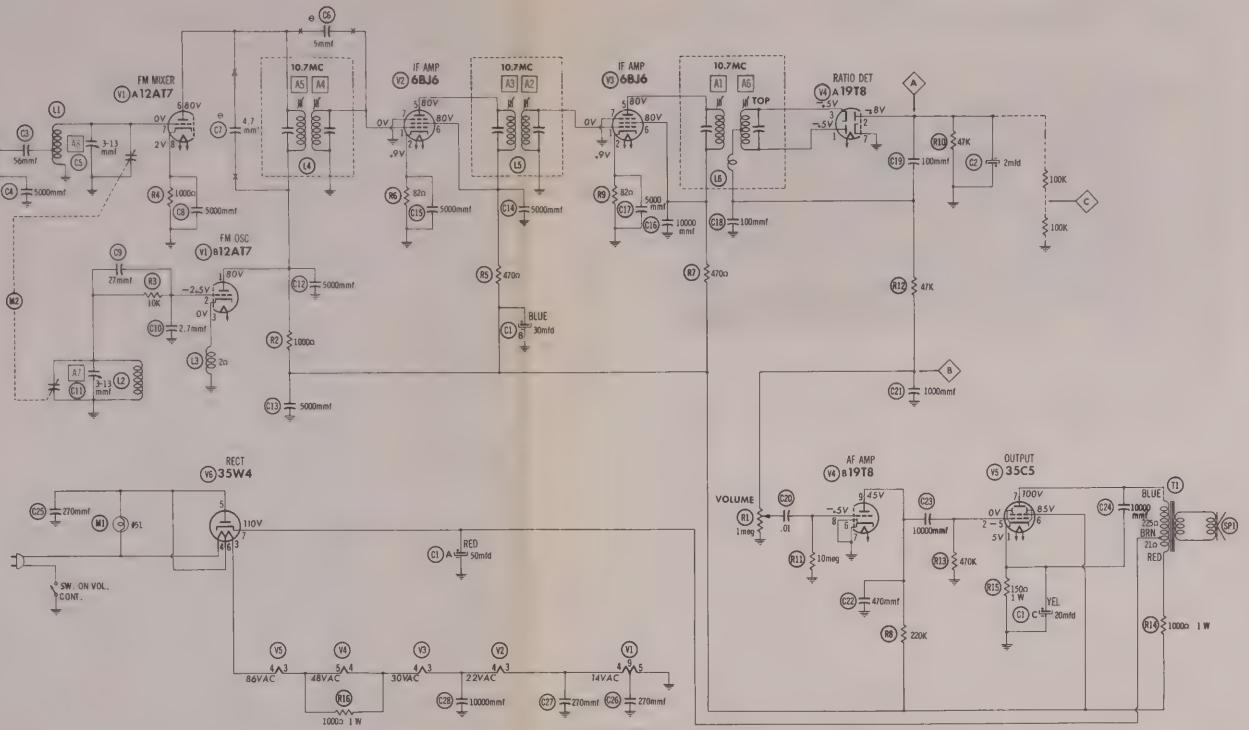


FIG. 2



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AT7	†2000Ω	10K	2Ω	12Ω	0Ω	†2000Ω	0Ω	1000Ω	6Ω
V2	6BJ6	.8Ω	82Ω	12Ω	18Ω	†1400Ω	†1400Ω	0Ω		
V3	6BJ6	.8Ω	82Ω	18Ω	24Ω	†1400Ω	†1400Ω	0Ω		
V4	19T8	1Meg	47K	1Meg	24Ω	44Ω	0Ω	0Ω	10Meg	†220K
V5	35C5	150Ω	470K	44Ω	80Ω	470K	†1000Ω	†225Ω		
V6	35W4	TP	NC	80Ω	115Ω	110Ω	110Ω	20K		

† MEASURED FROM PIN 7 OF V6.
NC NO CONNECTION
TP TIE POINT

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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3924 MEADE ST.
DENVER, COLORADO

RCA VICTOR MODELS 8-C-7EE, FE, LE,
8-C-8DE, JJ, ME (Ch. RC-1166)

RCA VICTOR MODELS 8-C-7EE, FE, LE,
8-C-8DE, JJ, ME (Ch. RC-1166)

TRADE NAME	RCA Victor Models 8-C-7EE, 8-C-7FE, 8-C-7LE, 8-C-8DE, 8-C-8JJ, 8-C-8ME (Ch. RC-1166)
MANUFACTURER	RCA Victor Radio & "Victrola" Div., Radio Corp. of America, Camden 8, N.J.
TYPE SET	AC Operated AM Receiver With Electric Clock
TUBES (Five)	Type 12BE6 Converter, 12BA6 IF Amplifier, 12AV6 Det.-AVC-AF Amp., 50C5 Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycles — RATING .27 Amp. @ 117 Volts AC (27 Watts)
TUNING RANGE—BROADCAST	540KC-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Loop should be maintained in the same relative position to chassis as when the receiver is in cabinet.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
If necessary to adjust dial pointer, close tuning gang and adjust left edge of dial pointer to coincide with score mark on left end of dial backplate.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to pin 1 (grid) of 12BA6 (V2). Low side to B-.	455KC (400~Mod)	Point of non-interference near 1600KC	Across voice coil	A1	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	High side to antenna stator lug on tuning gang. Low side to B-.	"	"	"	A2, A3	"
3.		Loop	1620KC	Tuning gang fully open	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
4.		"	1400KC	Tune to 1400KC signal	"	A5	"
5.		"	600KC	Tune to 600KC signal	"	A6	Adjust for maximum output while rocking tuning gang. Repeat steps 3, 4 and 5.

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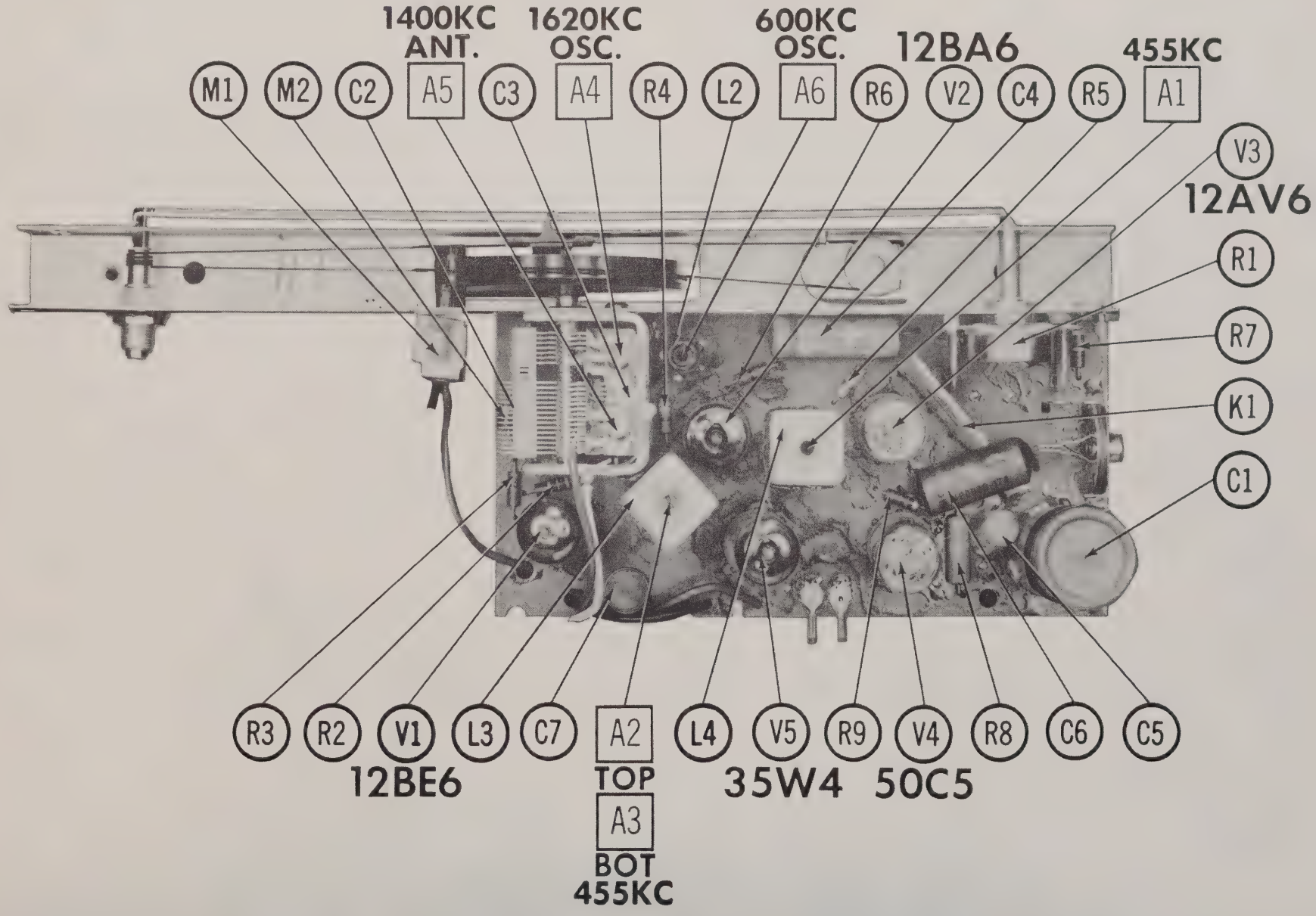


CHASSIS-TOP VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Converter	12BE6	
V2	IF Amplifier	12BA6	
V3	Det. -AVC-AF Amp.	12AV6	
V4	Output	50C5	
V5	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	50	150	103197		BBRD5515	TCD49		CADP-513	R2377 *
B	50	150							

* Non-catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	56		100085	NP0-SI 56	TCZ-56	CTA6Q56C	TCO-56			NP0
C3	5.6		103440							N3300
C4	.047	400	73553	BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	
C5	.012	400	103195							
C6	.082	400	103191							
C7	.047	400	103239	BPD-05	DF-503	BC6S47J		ACE6147	4SE-S47	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	1Meg	½	103214					Volume

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	RCA Victor PART No.	IRC PART No.	
R2	33K		502333	BTS-33K	
R3	100Ω		502110	BTS-100	
R4	3.3Meg		502533	BTS-3.3Meg	
R5	3.3Meg		502533	BTS-3.3Meg	
R6	100Ω		502110	BTS-100	
R7	47K		502347	BTS-47K	
R8	1200Ω	1	512212	BTA-1200	
R9	150Ω		502115	BTS-150	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2400Ω Tapped	3-4Ω	79283	Z1102 ①	A-3031①	A-3336 ①	24S50A ①	S-16X ①	① Drill new mounting hole.

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	RCA Victor PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	79696	4A07	

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

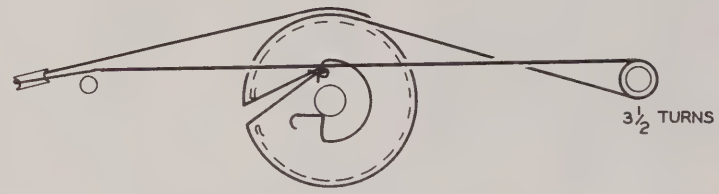
ITEM No.	USE	REPLACEMENT DATA				NOTES
		RCA Victor PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Antenna	103223				Includes cabinet back
L2	Osc. Coil	103204				
L3	Input IF	103206				
L4	Output IF	103207	16-6780			

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	RCA Victor PART No.	REPLACEMENT DATA
K1	Det. -Audio Det.	125MMF, 250MMF, 5000MMF, 5000MMF, 220MMF, 470K, 470K, 6.8Meg	103205	

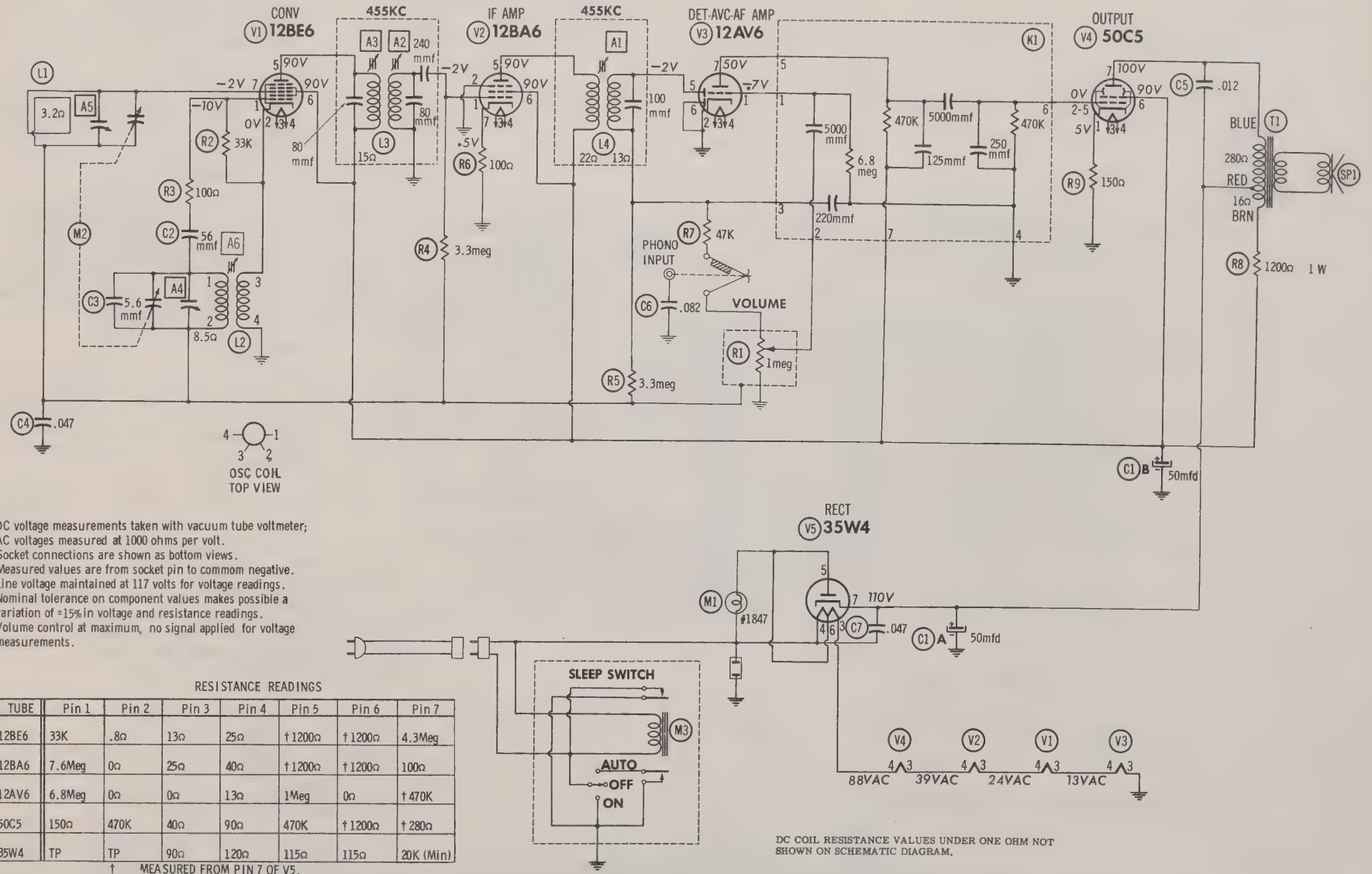
MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M1	Dial Light	103211	#1847
M2	Tuning Cap.	103209	Two gang (12-392MMF, 7-114MMF)
M3	Clock		
	Pointer	103213	
	Dial Glass	103226	
	Base	Z3663	Case Base Assy with feet, less metal support, 8-C-8 Series
	Knob	103221	On-off, alarm timer control lever
	Knob	103222	Sleep switch
	Knob	103228	Tuning, antique white
	Knob	103230	Tuning, light gray, Model 8-C-8JJ
	Knob	103229	Volume control, antique white
	Knob	103231	Volume control, Light gray, Model 8-C-8JJ
	Case	Y3655	Back, antique white, Model 8-C-7EE
	Case	Y3657	Back, pink, Model 8-C-7FE
	Case	Y3656	Back, turquoise, Model 8-C-7LE
	Case	Y3654	Front, Antique white, Models 8-C-7EE, LE, FE
	Case	Y3661	Back, Black Model 8-C-8DE
	Case	Y3662	Back, Dark Gray, Model 8-C-8JJ
	Case	Y3660	Back, Maple, Models 8-C-8ME
	Case	Y3658	Front, Antique white, Models 8-C-8DE, ME
	Case	Y3659	Front, Light Gray, Model 8-C-8JJ



TUNING GANG FULLY CLOSED

DIAL CORD STRINGING



1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to commom negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	33K	.8Ω	13Ω	25Ω	†1200Ω	†1200Ω	4.3Meg
V2	12BA6	7.6Meg	0Ω	25Ω	40Ω	†1200Ω	†1200Ω	100Ω
V3	12AV6	6.8Meg	0Ω	0Ω	13Ω	1Meg	0Ω	†470K
V4	50C5	150Ω	470K	40Ω	90Ω	470K	†1200Ω	†280Ω
V5	35W4	TP	TP	90Ω	120Ω	115Ω	115Ω	20K (Min)

† MEASURED FROM PIN 7 OF V5.
TP TIE POINT

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

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RCA VICTOR MODELS 8-X-8D, J, L, N (Ch. RC-1167)

PROPERTY OF
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3924 MEADE ST.
DENVER, COLORADO

RCA VICTOR MODELS
8-X-8D, J, L, N (Ch. RC-1167)

RCA VICTOR MODELS
8-X-8D, J, L, N (Ch. RC-1167)

TRADE NAME	RCA Victor Models 8-X-8D, 8-X-8J, 8-X-8L, 8-X-8N (Ch. RC-1167)
MANUFACTURER	RCA Victor Radio & "Victrola" Div., Radio Corp. of America, Camden 8, N.J.
TYPE SET	AC-DC Operated AM Receiver
TUBES (Five)	Types 12BE6 Converter, 12BA6 IF Amplifier, 12AV6 Det.-AVC-AF Amp., 50C5 Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-DC — RATING .27 Amp. @ 117 Volts AC (27 Watts)
TUNING RANGE—BROADCAST	540KC-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Loop should be maintained in the same relative position to chassis as when the receiver is in cabinet.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to pin 1 (grid) of 12BA6 (V2). Low side to B-.	455KC (400∿Mod)	Point of non-interference near 1600KC	Across voice coil	A1	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	High side to antenna stator lug on tuning gang. Low side to B-.	"	"	"	A2, A3	"
3.		Loop	1620KC	Tuning gang fully open	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
4.		"	1400KC	Tune to 1400KC signal	"	A5	"
5.		"	600KC	Tune to 600KC signal	"	A6	Adjust for maximum output while rocking tuning gang. Repeat steps 3, 4 and 5.

To adjust dial pointer, close tuning gang and adjust left edge of pointer to coincide with score mark on left end of dial background.

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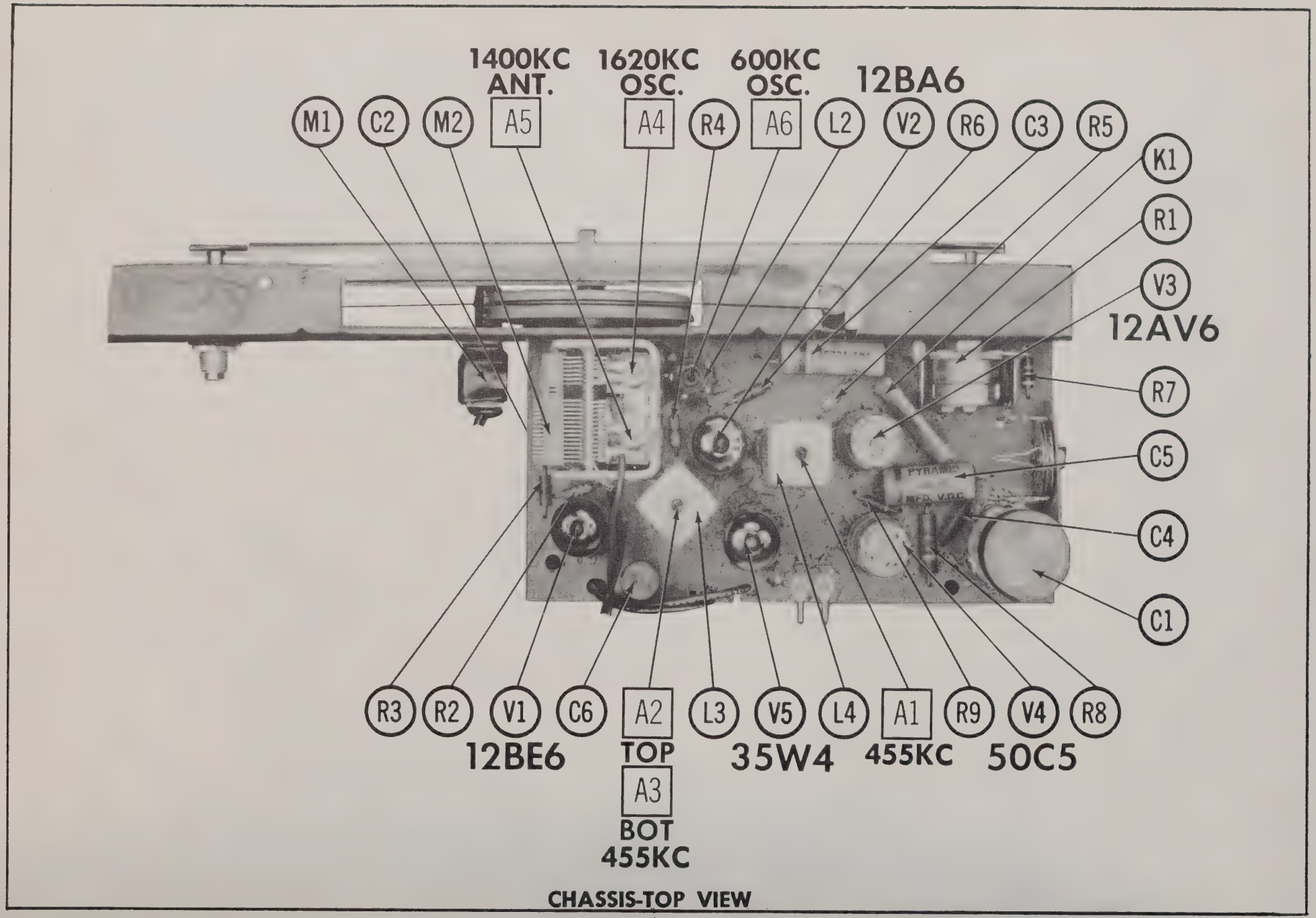


CHASSIS-TOP VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Converter	12BE6	
V2	IF Amplifier	12BA6	
V3	Det.-AVC-AF Amp.	12AV6	
V4	Output	50C5	
V5	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	50	150	103197		BBRD5515	TCD49		CADP-513	R2377 *
B	50	150							

* Non-catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	56		100085	NPO-SI 56	TCZ-56	CTA6Q56C				NP0
C3	.047	400	73553	BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	
C4	12000		103195							
C5	.082	400	103191							
C6	.047	400	103239	BPD-05	DF-503	BC6S47J		ACE6147	4SE-S47	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	1Meg	½	103208					Volume & Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	RCA Victor PART No.	IRC PART No.	
R2	33K		502333	BTS-33K	
R3	100Ω		502110	BTS-100	
R4	3.3Meg		502533	BTS-3.3Meg	
R5	3.3Meg		502533	BTS-3.3Meg	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	RCA Victor PART No.	IRC PART No.	
R6	100Ω		502110	BTS-100Ω	
R7	47K		502347	BTS-47K	
R8	1200Ω	1	512212	BTA-1200	
R9	150Ω		502115	BTS-150	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2400Ω tapped	1.65Ω	100661		A-3032①		24S51A ①		① Drill one new mounting hole.

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	RCA Victor PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	79696	4A07	
SP2	4"	PM	3-4Ω	79696	4A07	

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

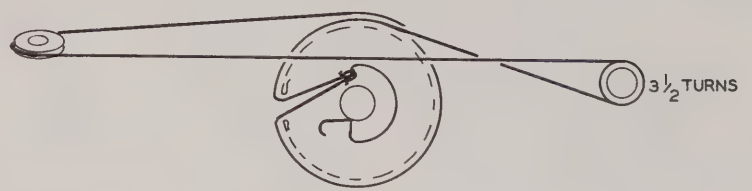
ITEM No.	USE	REPLACEMENT DATA				NOTES
		RCA Victor PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Ant.	103185				Includes cabinet back
L2	Osc. Coil	103204				
L3	Input IF	103206				
L4	Output IF	103207				

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	RCA Victor PART No.	REPLACEMENT DATA
K1	Det.-Audio Net.	125MMF, 5000MMF, 250MMF, 220MMF, 5000MMF, 470K, 470K, 6.8Meg	103205	

MISCELLANEOUS

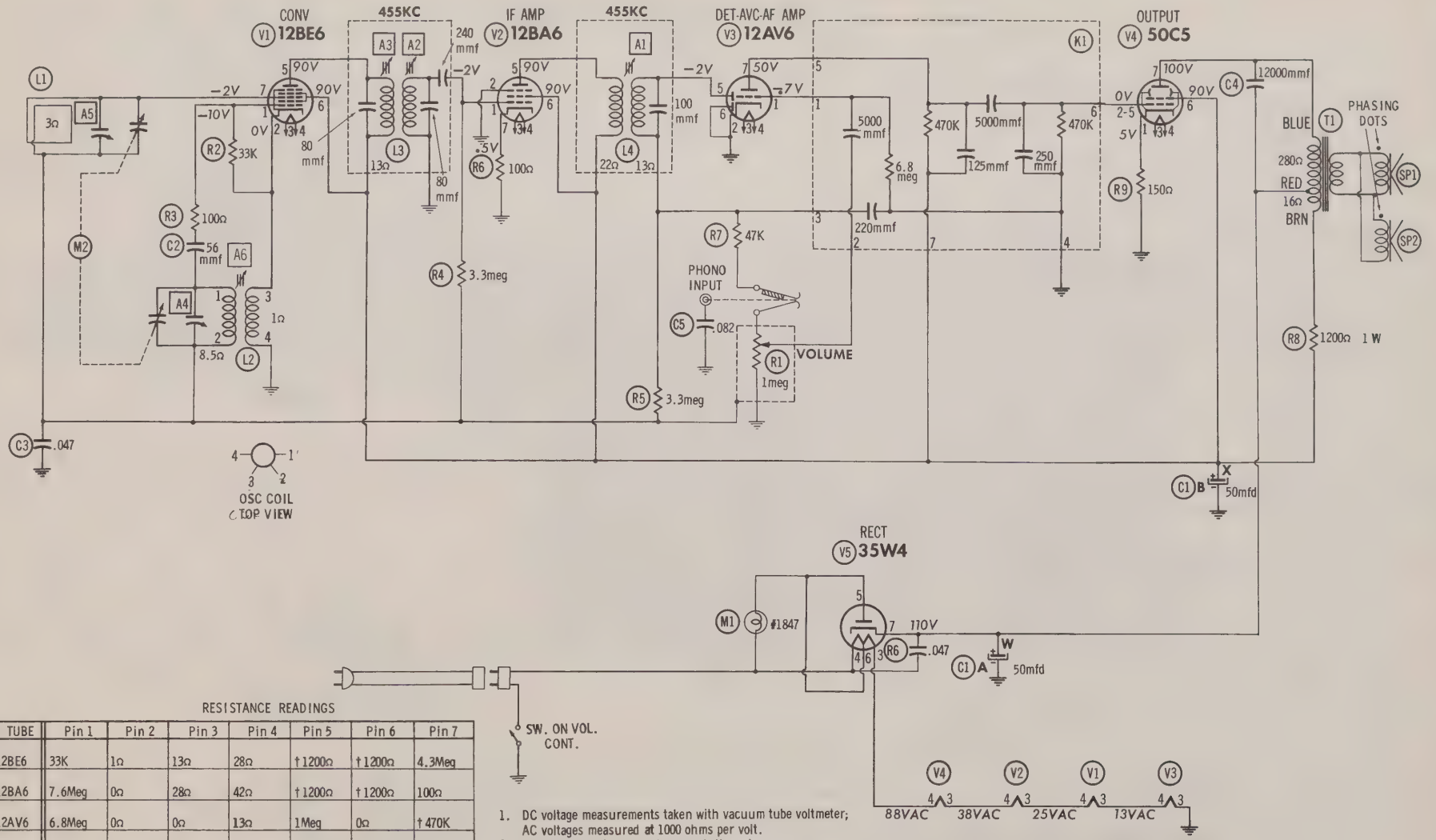
ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M1	Dial Light	103211	#1847
M2	Tuning Cap.	103209	Two Gang (12-392MMF, 7-114MMF)
	Plastic Dial	103184	
	Pointer	103202	
	Knob	103189	On-off-volume, Tuning, Model 8-X-8D
	Knob	103188	On-off-volume, Tuning, Model 8-X-8N
	Knob	103187	On-off-volume, Tuning, Model 8-X-8J
	Knob	103190	On-off-volume, Tuning, Model 8-X-8L
	Cabinet	Y4047	Model 8-X-8D (Black)
	Cabinet	Y4046	Model 8-X-8N (Ivory)
	Cabinet	Y4045	Model 8-X-8J (Light Grey)
	Cabinet	Y4048	Model 8-X-8L (Turquoise)



TUNING GANG FULLY CLOSED

DIAL CORD STRINGING

RCA VICTOR MODEL 8-X-8D (Ch. RC-1167)



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	33K	1Ω	13Ω	28Ω	†1200Ω	†1200Ω	4.3Meg
V2	12BA6	7.6Meg	0Ω	28Ω	42Ω	†1200Ω	†1200Ω	100Ω
V3	12AV6	6.8Meg	0Ω	0Ω	13Ω	1Meg	0Ω	†470K
V4	50C5	150Ω	470K	42Ω	90Ω	470K	†1200Ω	†280Ω
V5	35W4	TP	TP	90Ω	120Ω	115Ω	115Ω	20K (Min)

† MEASURED FROM PIN 7 OF V5.
TP TIE POINT
NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to commom negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

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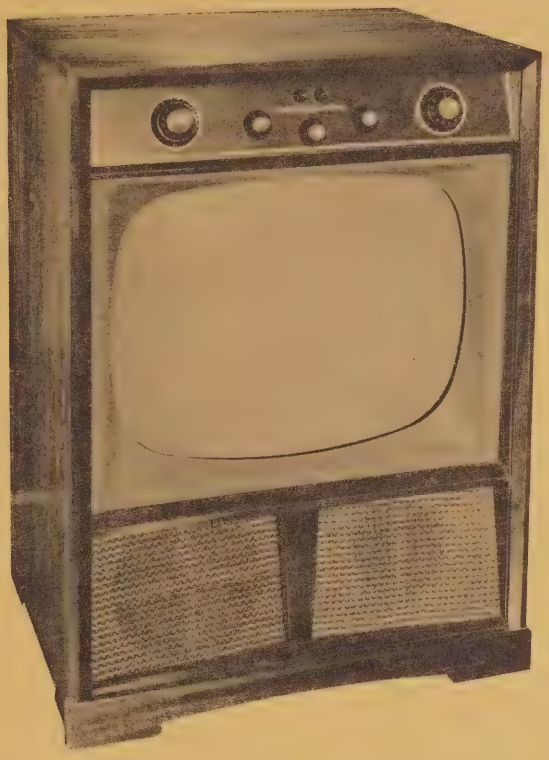

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SETCHELL-CARLSON MODELS 571, 572, 573, 5701, -T, 5702, -T, 5703 (Ch. 157 RP)

SETCHELL-CARLSON MODEL 572 (CH. 157RP)

TRADE NAME	Setchell-Carlson	MODELS	CHASSIS
		571, 572, 573, 5701, 5701-T, 5702, 5702-T, 5703	157RP
MANUFACTURER	Setchell-Carlson Inc., New Brighton, Minn.		
TYPE SET	Combination TV & Radio Receiver		
TUBES	Twenty-eight		
POWER SUPPLY	110-120 Volts AC, 60 Cycles	RATING (TV) 215 Watts 1.9 Amp. @ 117 Volts AC (Radio) 75 Watts .66Amp. @ 117 Volts AC	
TUNING RANGE	(TV) Channels 2 thru 13 VHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier) (Radio) 535KC to 1700KC, AM IF 456KC		

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DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 9 push-on type knobs from the front.
2. Remove 8 wood screws and the rear cover.
3. Remove 2 wood screws and the antenna terminal board.
4. Remove speaker plug, yoke plug, picture tube socket and HV lead.
5. Remove 2 chassis bolts.
6. Remove chassis.
7. Remove 8 speaker nuts and 2 speakers.

PICTURE TUBE REMOVAL

1. Remove safety glass and mask as outlined in "Picture Tube & Safety Glass Cleaning."
2. Remove 4 bolts holding tube clamp to the chassis.
3. Remove picture tube, yoke, etc., from the front of the cabinet.

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MODELS	CHASSIS
571, 572, 573, 5701, 5701-T, 5702, 5702-T, 5703	157RP

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF oscillator is possible by removing the channel selector and fine tuning knobs. Set the fine tuning at the center of its range. The adjustments are accessible, one at a time, as the channel selector is rotated. Adjust for best picture and sound.

PICTURE TUBE SAFETY GLASS CLEANING

Remove 3 wood screws holding wood strip at top of the glass. Remove the strip and safety glass.

SPECIAL ADJUSTMENTS

A. Focus

The focus may be varied by the position of a strap on the base of the picture tube. The strap can be connected between pins 6 and 10, or 6 and 2. Readjust the Ion trap for the best focus consistent with maximum brightness.

B. Width

The width may be varied by means of a brass sleeve located between the yoke and the picture tube neck. Adjust sleeve in or out of the yoke for a picture SLIGHTLY larger than necessary to fill the screen.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjust the horizontal hold until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (A18) located on top of chassis.

FUSES

One fuse is used for LV power supply protection. (For location see tube placement chart).

CENTERING

Centering is accomplished mechanically by adjusting the two magnetic rings around the neck of the picture tube. Rotate the two rings around the neck of the tube until the picture is properly centered.

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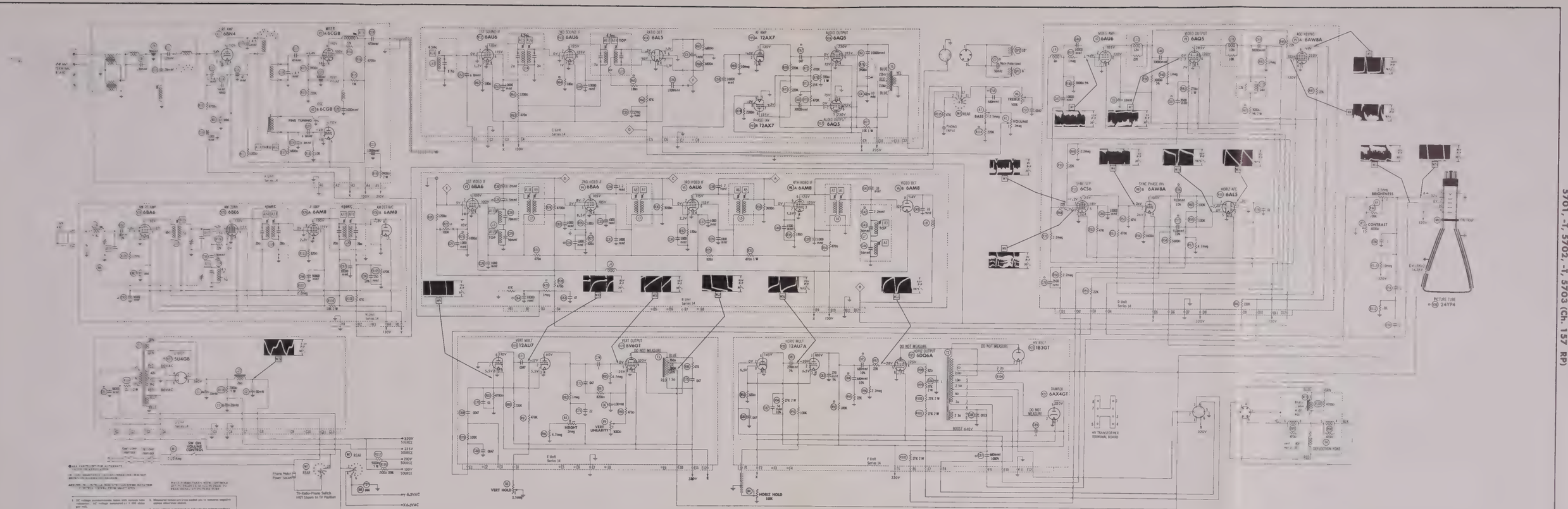

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TUBE PLACEMENT CHART

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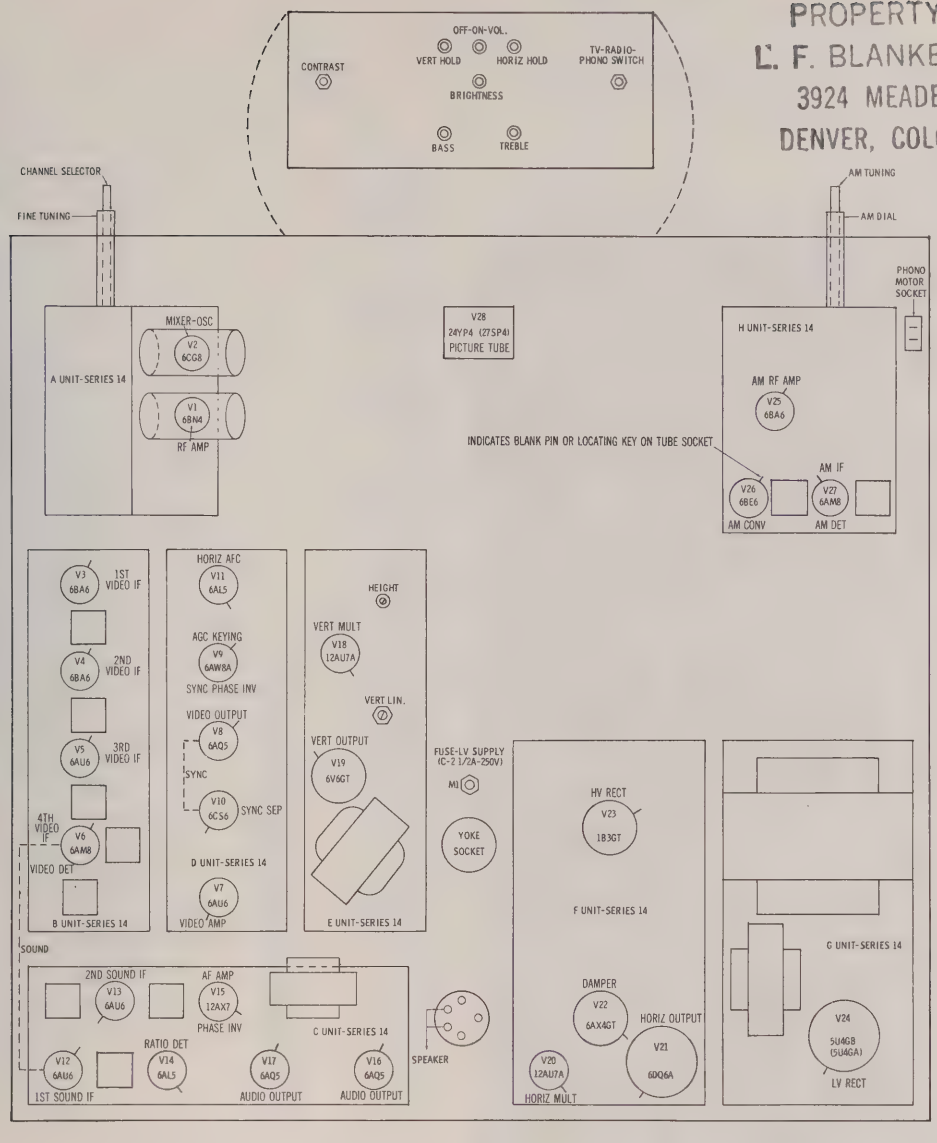


TUBE FAILURE CHECK CHART

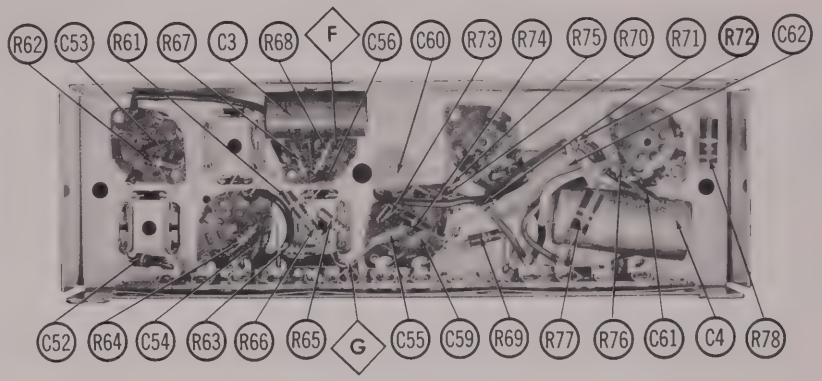
The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - **Fuse (M1), V27**

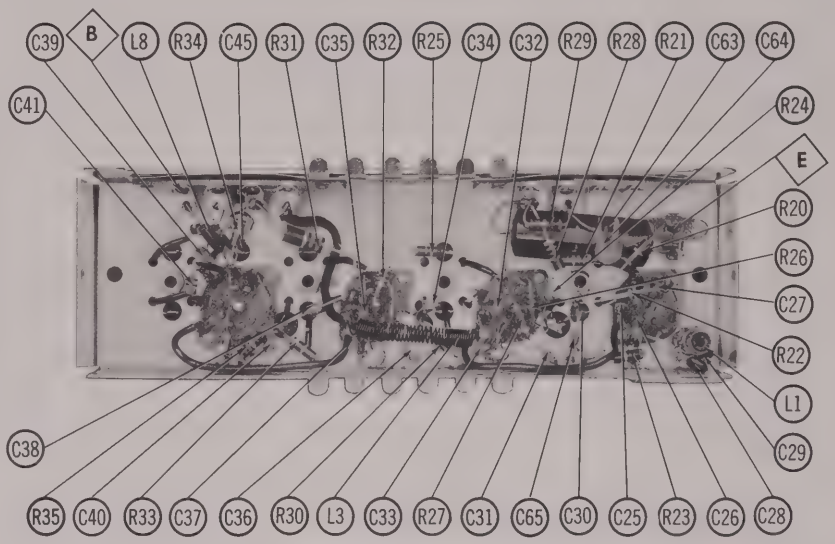
LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - **V3, V4, V5, V6, V9**
No pic, no sound, has snow - **V1, V2, V3**
No pic, has sound, has raster - **V7, V8, V28**
Has pic, no sound - **V12, V13, V14, V15, V16, V17**
Overloaded picture - **V9**

SYNC FAILURE
No vert. sync - **V10, V9**
No horiz. sync - **V10, V9, V11**
No vert. or horiz. sync - **V10, V9**

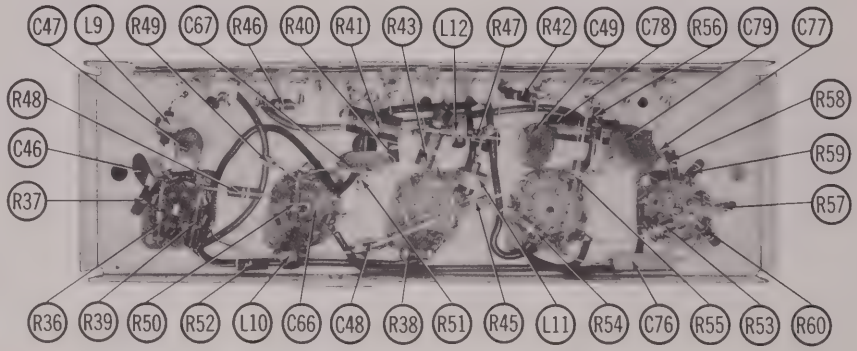
SWEEP FAILURE
No raster, has sound - **V20, V21, V22, V23, V28**
No vertical deflection - **V18, V19**
Poor vert. linearity or foldover - **V18, V19**
Poor horiz. linearity or foldover - **V11, V20, V21, V22**
Narrow picture - **V20, V21, V22, V27**
Vert. off freq. - **V18**
Horiz. off freq. - **V11, V20**



SOUND SUB ASSEMBLY



VIDEO IF SUB ASSEMBLY



VIDEO OUTPUT, AGC, SYNC, AFC SUB ASSEMBLY

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis.

VIDEO IF ALIGNMENT

Remove the mixer-osc. tube (V2) to reduce the possibility of erroneous indication.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to point Ⓐ. Low side to chassis.	44.0MC (10MC Swp)	41.25MC 45.75MC 47.25MC	Any non-interfering channel.	Vert. amp. thru 10K to point Ⓑ. Low side to chassis.	A1, A2, A3, A4	Adjust for response curve similar to Fig. 1. Adjust A1 and A2 to shape curve and position 45.75MC marker. A3 is adjusted to place 47.25MC marker in trap notch. A4 is adjusted to place 41.25MC marker in its trap notch.
2.	"	High side to point Ⓒ. Low side to chassis.	"	"	"	"	A5, A6	Adjust for response curve similar to Fig. 2.
3.	"	High side to point Ⓓ. Low side to chassis.	"	"	"	"	A7, A8	"
4.	"	High side to point Ⓔ. Low side to chassis.	"	"	"	"	A9, A10, A11, A12	Adjust A9 and A10 for response similar to Fig. 2. Adjust A11 to place 41.25MC marker in trap notch. Adjust A12 to place 47.25MC marker in trap notch.
5.	"	Replace V3 in its socket. High side to a thin insulated metal strip inserted between mixer-oscillator tube (V2) and tube shield.	"	"	"	"	A13	Adjust for maximum symmetrical response as shown in Fig. 2. If necessary, retouch A1, A2 and A5 thru A10 for proper response similar to Fig. 2.

SOUND IF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	.01MFD	High side to point Ⓑ. Low side to chassis.	4.5MC	Any non-interfering channel.	DC probe to point Ⓕ. Common to chassis.	A14, A15, A16, A17	Detune A18 by turning counter clockwise SLIGHTLY. Adjust A14, A15, A16 and A17 for maximum deflection. Use only enough generator output to provide usable indication on VTVM.
7.	"	"	"	"	DC probe to point Ⓖ. Common to chassis.	A18	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

OSCILLATOR ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the center of its range.
Use only enough sweep generator output to provide usable pattern on scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. amp. thru 47K to point Ⓑ. Low side to chassis.	A19	Adjust to place sound marker in trap notch as in Fig. 3. Video marker should fall at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A20	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A21	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A22	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A23	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A24	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A25	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A26	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A27	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A28	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A29	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A30	

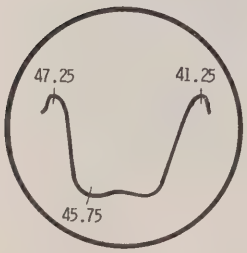


FIG. 1

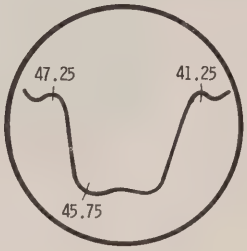


FIG. 2

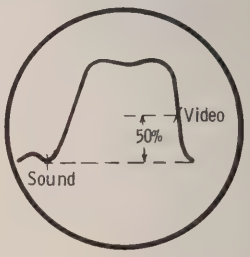


FIG. 3

ALIGNMENT INSTRUCTIONS (cont)

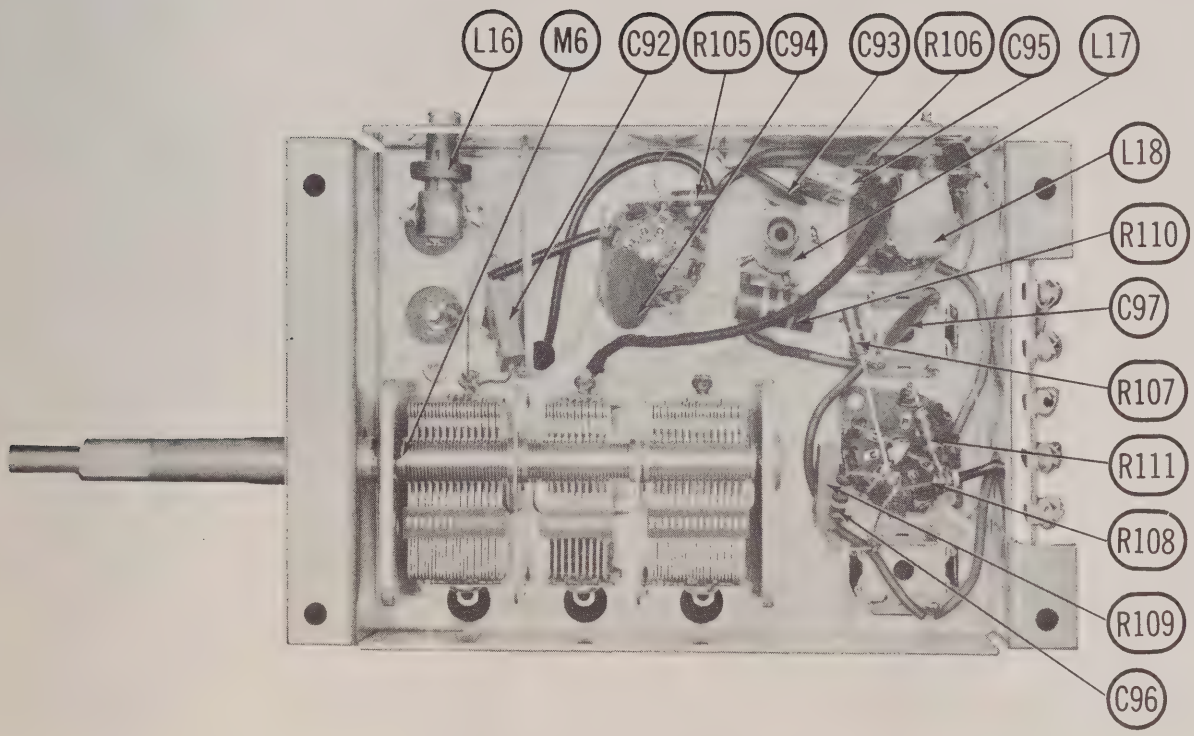
RF AND MIXER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

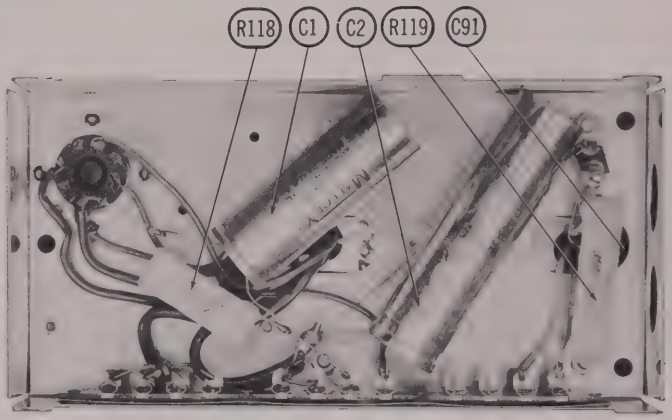
RADIO ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

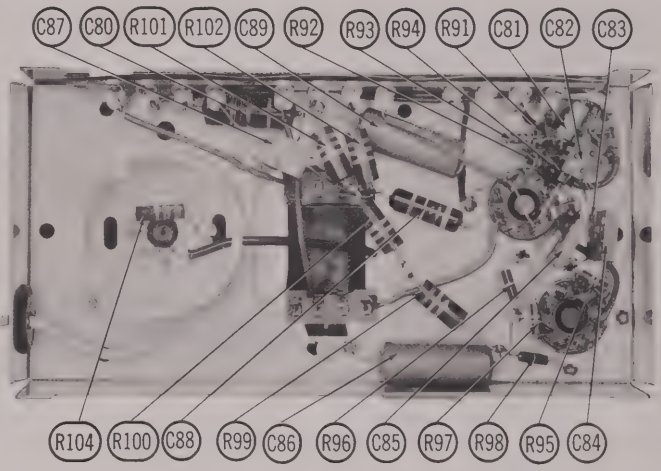
	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
9.	.01MFD	High side to pin 7 (grid) of 6BE6 (V25). Low side to chassis.	456KC (400% Mod)	Radio	Tuning gang fully open.	Across voice coil.	A31, A32, A33, A34	Adjust for maximum deflection.
10.	"	"	1700KC	"	"	"	A35	"
11.	"	Loop	1400KC	"	Tune to 1400KC signal.	"	A36, A37, A38	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.



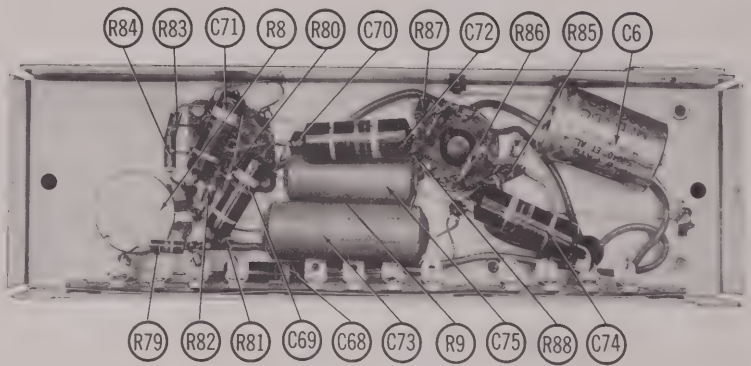
RADIO SUB ASSEMBLY



POWER SUPPLY SUB ASSEMBLY



HORIZONTAL SUB ASSEMBLY



VERTICAL SUB ASSEMBLY

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RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BN4	0Ω	1Meg	0Ω	.1Ω	†3500Ω	0Ω	1Meg		
V2	6CG8	10K	†9300Ω	0Ω	0Ω	.1Ω	†7200Ω	†35K	0Ω	224K
V3	6BA6	100K	1000Ω	0Ω	.1Ω	†4200Ω	†4200Ω	1000Ω		
V4	6BA6	100K	820Ω	0Ω	.1Ω	†3800Ω	†3800Ω	1000Ω		
V5	6AU6	.1Ω	180Ω	0Ω	.1Ω	†3000Ω	†3000Ω	180Ω		
V6	6AM8	180Ω	.1Ω	†3000Ω	0Ω	.1Ω	†3000Ω	.1Ω	3000Ω	180Ω
V7	6AU6	1Meg	0Ω	0Ω	.1Ω	†5500Ω	†2500Ω	0Ω		
V8	6AQ5	1Meg	•3700Ω	0Ω	.1Ω	†3000Ω	†2500Ω	1Meg		
V9	6AW8A	5600Ω	47K	†8000Ω	.1Ω	0Ω	†2500Ω	†27K	†22K	270K
V10	6CS6	†2.2Meg	0Ω	0Ω	.1Ω	35K	†50K	2.2Meg		
V11	6AL5	27K	27K	.1Ω	0Ω	4.8Meg	0Ω	4.8Meg		
V12	6AU6	3.7Ω	0Ω	0Ω	.1Ω	†4000Ω	†4000Ω	180Ω		
V13	6AU6	2Ω	0Ω	.1Ω	0Ω	†3000Ω	†3000Ω	180Ω		
V14	6AL5	1.8Meg	1.8Meg	0Ω	.1Ω	6800Ω	0Ω	6800Ω		
V15	12AX7	†230K	10Meg	0Ω	0Ω	0Ω	†230K	15K	2200Ω	.1Ω
V16	6AQ5	480K	330Ω	0Ω	.1Ω	†2200Ω	†12K	480K		
V17	6AQ5	470K	330Ω	0Ω	.1Ω	†2200Ω	†12K	470K		
V18	12AU7	†1.8Meg	•750K	4700Ω	0Ω	0Ω	†220K	0Ω	4700Ω	.1Ω
V19	6V6GT	TP	.1Ω	†550Ω	†230Ω	4.7Meg	TP	0Ω	•800Ω	
V20	12AU7A	†100K	•140K	820Ω	0Ω	0Ω	†27K	7Meg	820Ω	.1Ω
V21	6DQ6A	TP	.1Ω	NC	ǂ81K	2.2Meg	TP	0Ω	0Ω	TOP CAP ǂ13Ω
V22	6AX4GT	TP	NC	INF	NC	†26Ω	NC	.1Ω	0Ω	
V23	1B3GT	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP ǂ223Ω
V24	6BA6	3.5Meg	0Ω	0Ω	.1Ω	†2500Ω	†20K	0Ω		
V25	6BE6	22K	.5Ω	0Ω	.1Ω	†2500Ω	†20K	2.5Meg		
V26	6AM8	820Ω	20Ω	†20K	0Ω	.1Ω	†2500Ω	0Ω	360K	0Ω
V27	5U4GB	NC	¶	NC	42Ω	NC	39Ω	TP	¶	
V28	24YP4	0Ω	1Meg	Pin 6 †26Ω	Pin 10 †26Ω	Pin 11 •550K	Pin 12 .1Ω			

† MEASURED FROM PIN 8 OF V27.

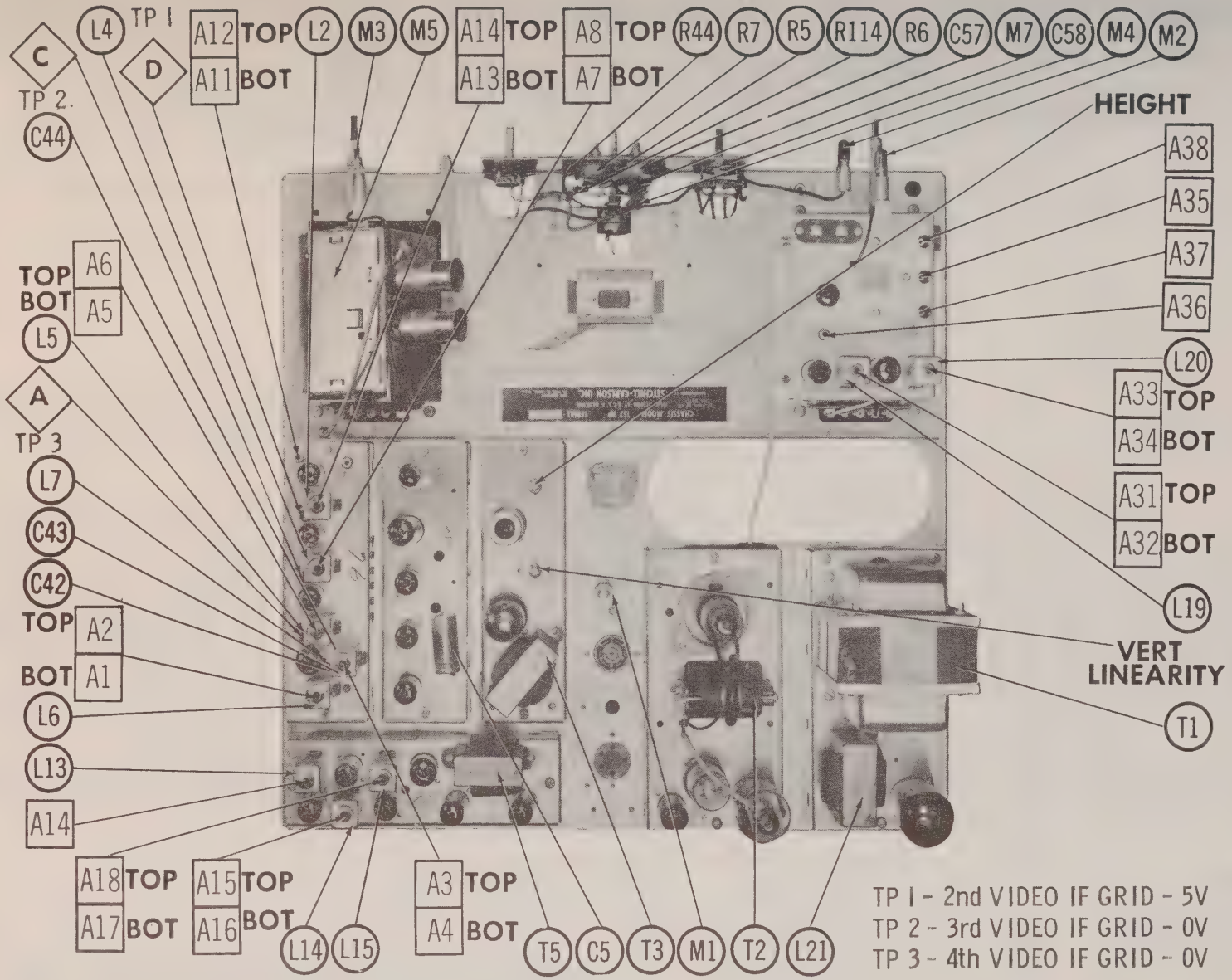
ǂ MEASURED FROM PIN 3 OF V22.

THIS READING WILL VARY, CONTROL SET FOR NORMAL OPERATION.

¶ THIS READING CAN VARY GREATLY, (10K MINIMUM), DUE TO THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.

NC NO CONNECTION

TP TIE POINT



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CHASSIS TOP VIEW

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PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No	USE	TYPE	NOTES
V1	RF Amplifier	6BN4	
V2	Mixer-Oscillator	6CG8	
V3	1st Video IF Amp	6BA8	
V4	2nd Video IF Amp	6BA8	
V5	3rd Video IF Amp	6AU6	
V6	4th Video IF Amp - Video Det	6AM8	
V7	Video Amp	6AU8	
V8	Video Output	6AQ8	
V9	AGC Keying Sync Phase Inv.	6AW8A	
V10	Sync Amp	6CS8	
V11	Horiz. AFC	6AL5	
V12	1st Sound IF Amp	6AU6	
V13	2nd Sound IF Amp	6AL5	Note 1

Note 1: Some models may use 5U4GA in this application.

PICTURE TUBE

ITEM No	REPLACEMENT DATA Sutchell-Carlson PART No.	CBS PART No	GENERAL ELECTRIC PART No	SYLVANIA PART No	NOTES
V28	24YP4	24YP4 ③	24YP4 ③	24YP4 ③ 24DP4A 24DP4	① Silver screen "65" ② Aluminized
	27BP4		27BP4		

ELECTROLYTIC CAPACITORS

ITEM No	RATING CAP	VOLT	Sutchell-Carlson PART No.	REPLACEMENT DATA AEROVOX PART No	CORNELL-DUBILIER PART No	PYRAMID PART No	SANGAMO PART No	SPRAGUE PART No	NOTES
C1A	20	450	C-112	PR450V2030	BRRD2345	TCD75	TDLD-38	FMD-4530	TVA-3730
B	30	450							
C2	80	450	C-113	PR450V80	BR8045	TC80	TD-80-450	MT-4580	TVA-1718
C3	5	150		PR150V4	BR1546-150	TC5	TD-5-150	FM-1504	TVA-1403
C4	10	450		PR450V10	BR1045	TC10	TD-10-450	FM-4510	TVA-1706
C5	10	450		PR450V10	BR1045	TC10	TD-10-450	FM-4510	TVA-1706
C6	100	50		PR50V100	BR1006	TC3501	TD-100-50	MTH-5010	TVA-1310
C7	50	10	C-118 ①	MP-PR10V NP50	BRR100 ① BRR100 ②	TC2501 TC2801		MTH-1050 MTH-1250	R-2223 *

1 Non polarized unit.
2 Connect negative leads together.
* Non-catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No	RATING CAP	VOLT	Sutchell-Carlson PART No.	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C9	130			BPD-0001J	DD-131	L107J3	ED-130	UC-5313	SQA-713	
C10	30									
C10	26									
C11	13									
C13	1.5-4.5			839-8		833-B	ED-1000	DC531	5HK-D1	
C14	1-4.5			839-5		833-B			5HK-D1	
C14	5									N900
C15	1000		KF-001	MFT-1000					503C-D1	
C16	47									
C17	47									
C18	1-4.5			839-8		833-B				
C19	470		BPD-00047	DD-471	BYA1D747	ED-470	UC-5347		SQA-747	
C20	1000									
C21	30		KF-001	MFT-1000					503C-D1	
C22	1000									
C23	6.8									
C24	6.8									
C25	1.8		NPO-SI 1	TCZ-1R8	C10V18C	TCO-1.5	ZT-5575		5TCCB-V18	②
C26	1000		BPD-001	DD-102	BYA5D1	ED-1000	DC531		5HK-D1	
C27	1000		BPD-001	DD-102	BYA5D1	ED-1000	DC531		5HK-D1	
C28	70		BPD-000068	DD-680	22R5Q7				MS-457	
C29	56		1469-00056	DD-560	22R5Q56				MS-456	
C30	1.5		NPO-SI 1	TCZ-1		TCO-1			5TCCB-V15	
C31	1000		BPD-001	DD-102	BYA5D1	ED-1000	DC531		5HK-D1	⑤
C32	1000		BPD-001	DD-102	BYA5D1	ED-1000	DC531		5HK-D1	
C33	1000		BPD-001	DD-102	BYA5D1	ED-1000	DC531		5HK-D1	
C34	1.5		NPO-SI 1	TCZ-1		TCO-1			5TCCB-V12	
C35	1000		BPD-001	DD-102	BYA5D1	ED-1000	DC531		5HK-D1	
C36	1000		BPD-001	DD-102	BYA5D1	ED-1000	DC531		5HK-D1	
C37	1000		BPD-001	DD-102	BYA5D1	ED-1000	DC531		5HK-D1	
C38	1.2		NPO-SI 1	TCZ-1		TCO-1			5TCCB-V12	
C39	1000		BPD-001	DD-102	BYA5D1	ED-1000	DC531		5HK-D1	
C40	1000		BPD-001	DD-102	BYA5D1	ED-1000	DC531		5HK-D1	
C41	3.3									
C43	2.2		NPO-SI 2.2	TCZ-2R2	C10V22C	TCO-2.2			5TCCB-V22	④
C43	56		1469-00056	DD-560	22R5Q56				MS-456	
C44	56		1469-00056	DD-560	22R5Q56				MS-456	
C45	10		NPO-SI 10	DD-100	L10Q	ED-10	UC-541		5GA-Q1	
C46	10000		BPD-01	DD-103	BYA5E1	ED-01	DC511		5HK-S1	
C47	10000		BPD-01	DD-103	BYA5E1	ED-01	DC511		5HK-S1	
C48	10000		BPD-05	DF-503	BYF5E3				5HK-S3	
C49	30000		BPD-03	DF-303	BYB6E3				5HK-S3	
C50	.1	400	P488N-1	DF-104	CUB4P1			GEM-401	4TM-P1	
C51	.1	400	P488N-1	DF-104	CUB4P1			GEM-401	4TM-P1	
C52	6.8		NPO-SI 6.8	TCZ-6R8	C10V68B	TCO-6.8	ZT-5568		5TCCB-V68	
C53	10000		BPD-01	DD-103	BYA5E1	ED-01	DC511		5HK-S1	
C54	10000		BPD-01	DD-103	BYA5E1	ED-01	DC511		5HK-S1	
C55	3700		BPD-0025	DF-372	BYA1D372	ED-0327			5HK-D25	
C56	1000		BPD-001	DD-102	BYA5D1	ED-1000	DC531		5HK-D1	
C57	.0047	400	BPD-0047	DD-472	CUB4D47	ED-0047	GEM-4347		4TM-D47	
C58	680		1464-00068	DB-681	1B2758				MS-368	①
C59	10000		BPD-01	DD-103	BYA5E1	ED-01	DC511		5HK-S1	
C60	30000		BPD-03	DF-303	BYB6E3				5HK-S3	
C61	10000		BPD-01	DD-103	BYA5E1	ED-01	DC511		5HK-S1	
C62	.047	400	BPD-05	DF-503	CUB4P47			GEM-4147	4TM-S47	⑨
C63	.47	400	P488N-47		CUB4P47			GEM-4047	4TM-P47	
C64	10000		BPD-01	DD-103	BYA5E1	ED-01	DC511		5HK-S1	⑥
C65	1000		BPD-001	DD-102	BYA5D1	ED-1000	DC531		5HK-D1	
C66	10000		BPD-01	DD-103	BYA5E1	ED-01	DC511		5HK-S1	
C67	3500		BPD-0032	DF-352	BYA1D3532	UC-5332			5HK-D32	⑦
C67	.0047	400	BPD-0047	DD-472	CUB4D47	ED-0047	GEM-4347		4TM-D47	
C68	.0047	400	BPD-0047	DD-472	CUB4D47	ED-0047	GEM-4347		4TM-D47	
C70	.01	400	BPD-01	DD-103	CUB4E1	ED-01	GEM-411		4TM-E1	

PARTS LIST AND DESCRIPTIONS

CAPACITORS (cont)

ITEM No	RATING CAP	VOLT	Sutchell-Carlson PART No.	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C71	.0047	400		BPD-0047	DD-472	CUB4D47	ED-0047	GEM-4247	4TM-D47	
C72	.047	400		BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	
C73	.22	400		P488N-22		CUB4P22		GEM-4122	4TM-P22	
C74		400		BPD-04		CUB4P-		GEM-401	4TM-P-	
C75	.047	400		BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	
C76	910			1464-00091		1B57S1			MS 39-	10% 7
C77	910			1464-00091		1B57S1			MS 39-	10% 7
C78	.01	600		BPD-01	DD-103	CUB4S-	ED-01	GEM 411	4TM -S	
C79	3500			BPD-0032	DD-352	BYA1D3532	ED-0033	UC-5323	5HK-S33	5
C80	.047	400		BPD-05	DF-503	BYA1D747		GEM-4147	4TM-S47	
C81	270			1469-00027		22R5T27			MS-327	9%
C82	56			1469-00056		22R5Q56			MS 456	10%
C83	270			1469-00027		22R5T27			MS-327	9%
C84	680			1464-00068		22R5T68			MS-368	10% 8
C85	680			1464-00068		22R5T68			MS-368	10% 8
C86	1	600		P488N-1		CUB4P1		GEM-601	4TM P-	
C87	680	1000		NYD-15-680		BYA1D7ER(HDI5-680		DCD9255	10HDI5-T68	4
C88	.0033	600		BPD-0033		D6-333		CUB4D33	ED-0033	6TM-4223	4TM-D33	⑪
C89	1	600		P488N-1		CUB4-1		CUB4P1		GEM-401	4TM-P1	
C90	1	400		P488N-1		D6-104		CUB4P1		GEM-401	4TM P1	
C91	30000			BPD-03		DF-303		BYB6E3		5HK-S3	⑪
C92	100			1469-0001				22R5T1		MC-35	10%
C93	30000			BPD-03	DF-303			BYB6E1		5HK-S3	⑪
C94	30000			BPD-03	DF-303			BYB6E3		5HK-S3	
C95	100			1469-0001				22R5T1		MC355	10%
C96	250			1469-00025				22R5T25		MS-325	10%
C97	30000			BPD-03	DF-303			BYB6E3		5HK-S3	

② Some versions use a 1.2MMF in this application.
③ Some versions use a 1.5MMF in this application.
④ Some versions use a 470MMF in this application.
⑤ Some versions use an .03MFD in this application.
⑥ Some versions use a 2700MMF in this application.
⑦ Some versions use a 1000MMF in this application.
⑧ Some versions use a 910MMF in this application.
⑨ Some versions use 30000MMF in this application.
⑩ Some versions use an .047MFD in this application.
⑪ Some versions are an .003MFD in this application.
* Not used in some versions.

CONTROLS

ITEM No.	RATING RESISTANCE	WATTS	Sutchell-Carlson PART No.	REPLACEMENT DATA CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2Meg	½	V-906	S-76	A47-2Meg-Z	QS-139	U56	Volume
B	Shaft			Not Req.	FS-2	Not Req.	Not Req.	
C	Switch			KS-1	SWK-13	78-1	UB-26	
R2A	500KΩ	½	V 805	AB-12		QT-114		Contrast
B	Shaft			AK-3		Not Req		
R3A	2 Meg	½	V-803	BX-83	A47-2.5Meg-S	QJ-239	SU-565	Vert. Hold
B	Shaft			Not Req.	FXH-1/4	SQ	Not Req.	
R4A	100K	½	V-802	AX-100	A47-100K-S	QJ-138	SU-61	Horiz. Hold
B	Shaft			Not Req.	FXH-1/4	SQ	Not Req.	
R5A	2 Meg	½	V-803	Not Req.	A47-2.5Meg-S	QJ-239	SU-565	Brightness
B	Shaft			Not Req.	FXH-1/4	SQ	Not Req.	
R6A	500K	½	V-804	AB-60	A47-500K-Z	QS-133	U68	Treble
B	Shaft			AK-1	FXH-1/4	SQ	Not Req.	
R7A	2 Meg	½	V-803	BX-83	A47-2.5Meg-S	QJ-239	SU-565	Bass
B	Shaft			Not Req	FXH-1/4	SQ	Not Req.	
R8A	2Meg	½	V-803	BX-75	A47-2Meg-S	QJ-139	SU-56	Height
B	Shaft			Not Req	FXH-1/4	SQ	Not Req.	
R9A	500Ω	½	V-801	AB-8	A47-500Ω-S	QU-112	SU-5	Vert. Lin.
B	Shaft			AK-1	FXH-1/4	SQ	Not Req.	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	WATTS	Sutchell-Carlson PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R10	4700Ω			BTS-4700	
R11	10000			BTS-1000	
R12	3900Ω			BTS 3900	
R13	220K			BTS-220K	
R14	22K			BTS-22K	
R15	33K			BTS-33K	
R16	4700Ω			BTS-4700	
R17	6800Ω			BTS-6800	
R18	10K			BTS-10K	
R19	3900Ω	2		BTS-3900	
R20	1200Ω				
R21	470Ω			BTS-470	
R22	100K				Note 1
R23	1000Ω			BTS-1000	Note 2
R24	4700Ω				
R25	820Ω			BTS-820	
R26	180Ω			BTS-180	Note 2
R27	8200			BTS-820	Note 2
R28	470Ω				
R29	10Meg			BTS-10Meg	Note 3
R30	3900Ω			BTS-3900	
R31	470Ω	1		BTA-470	
R32	180Ω			BTS-180	
R33	3900Ω			BTS-3900	
R34	470Ω			BTS-470	
R35	180Ω			BTS-180	
R36	3500Ω 5%				
R37	1Meg				
R38	3500Ω 5%			BTS-3500 5%	
R39	2.2Meg			BTS-2.2Meg	
R40	1Meg			BTS-1Meg	
R41	3300Ω 5%	3		BTS-3300	Note 4
R42	1Meg			BTS-1Meg	
R43	270Ω	1		BTA-270	
R44	100K			BTS-100K	
R45	22K			BTS-22K	
R46	330K			BTS-330K	
R47	22K			BTS-22K	
R48	33K			BTS-22K	

ITEM No.	RATING OHMS	WATTS	Sutchell-Carlson PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R49	2.2Meg			BTS-2.2Meg	
R50	22K			BTS-22K	
R51	470K			BTS-470K	
R52	47K			BTS-47K	
R53	47K			BTS-47K	
R54	5600Ω			BTS-5600	
R55	22K			BTS-22K	
R56	5600Ω			BTS-5600	
R57	4.7Meg				
R58	3.3Meg				
R59	10K				
R60	100K				
R61	100K			BTS-1300	
R62	180Ω			BTS-180	
R63	47K			BTS-47K	
R64	180Ω			BTS-180	Note 2
R65	180Ω			BTS-180	Note 2
R66	47K			BTS-47K	
R67	5600Ω			BTS-5600	
R68	10Meg			BTS-10Meg	
R69	10Meg			BTS-10Meg	
R70	33K			BTS-330K	
R71	15K			BTS-15K	
R72	470K			BTS-470K	
R73	33K			BTS-330K	
R74	2200Ω			BTS-2200	
R75	470K			BTS-470K	
R76	3900Ω			BTS-3900	
R77	10K	1		BTA-10K	
R78	330Ω	1		BTA-330	
R79	100K			BTS-100K	
R80	330K			BTS-330K	
R81	470K			BTS-470K	
R82	1Meg			BTS-1Meg	
R83	4700Ω			BTS-4700	
R84	4.7Meg			BTS-4.7Meg	
R85	4.7Meg			BTS-4.7Meg	
R86	47K			BTS-47K	
R87	820Ω			BTS-820	
R88	470Ω			BTS-470	

RESISTORS (cont)

ITEM No	RATING OHMS	WATT	Sutchell-Carlson PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R89	470Ω				Note 5
R90	470Ω				
R91	100K				
R92	100K				
R93	100K				
R94	27K	2			
R95	22K				
R96	2.2Meg				
R97	22K				
R98	82Ω			BTS 82	
R99	27K	2		BTD 27K	
R100	27K	2		BTD 27K	
R101	27K	2		BTD 27K	
R102	27K	2		BTS 27K	
R103	4700Ω				
R104	2.2Ω			10W-2.2	

Note 1 Not used in some versions
Note 2 A 150Ω resistor used in some versions
Note 3 A 100K resistor used in some versions
Note 4 A 33000Ω resistor used in some versions
Note 5 A 150K resistor used in some versions

ITEM No	RATING OHMS	WATT	Sutchell-Carlson PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R105	1Meg			BTS 1Meg	
R106	22K			BTS-22K	
R107	2.2Meg			BTS 2.2Meg	
R108	47K			BTS-47K	
R109	470K			BTS-470K	
R110	18K	2		BTD 18K	
R111	820K			BTS 820	
R112	10K			BTS 10K	
R113	10Meg			BTS 10Meg	
R114	220K			BTS 220K	Note 1
R115	47K			BTS 47K	
R116	2000Ω	30		BTS 2000	
R117	5000Ω	5		PW7 5000	
R118	2000Ω	5		PW7 2000	
R119	2Ω	10		PW10-2	

TRANSFORMER (POWER)

ITEM No.	RATING PRI	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA Halldorson PART No	Merit PART No.	Stancor PART No	Thordarson PART No	Triad PART No
T1	117VAC ± 9V	640VCT @ 220A	5V @ 3A	6.3V @ 7A	T-12				

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	Sutchell-Carlson PART No.	REPLACEMENT DATA Halldorson PART No	Merit PART No.	RCA TYPE No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T2	Horiz Output Trans	T-24	FB460 ① * 1	HVO-54 ① * 5		X130 ② * 8	A-8284 ② * 9	FLT-76 ① ② * 8	D-49 ① * 4
T3	Vert. Output Trans.	T-101							
T4A	Yoke (90°) Horiz. (30KHz)	Y-100 ③ Y-102 ③	DF607 ④ ⑤ ⑦	MDF-92 ④ ⑤ ⑦	235D1 ④ ⑤ ⑦	Y90F19/43 ④ ⑤ ⑦	DY-16A ④ ⑤ ⑦	Y-16 ④ 5 ⑤ 7	Y-41-3 & NW20.5 Y1-3
	Vert.(25-35Hz)								

① Drill new mounting holes.
② Does not include resistors R89, R90, R103, leads, or rear cover.
③ Yoke must cover and centering device.
④ Cut and form a piece of .010 gauge flat paper inside the yoke itself and support with an acetate cement, to provide an insulation between width sleeve and the yoke proper.
⑤ Connect yoke term. #3 to yoke plug pin #2. Yoke terms. #2 and #7 to yoke plug pin #4 thru resistor R105, yoke term. #1 to yoke plug pin #3.
⑥ Use original yoke damping network if necessary.
⑦ Use original rear cover and centering device.
† This part may be superceded by Parts Manufacturer's introduction of special unit for this application

* HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	RCA Replacement Connections	Ram Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
Horiz Out Tube Plate	5	5	5	5	5	5	5
5	4	4	4	4	4	4	6
1	4	4	4	4	4	4	7
7	NC See Note ⑧	NC See Note ⑧	NC See Note ⑧	NC See Note ⑧	NC See Note ⑧	NC See Note ⑧	NC See Note ⑧
3	3	3	2	2	2	2	2
4	2	7	7	7	7	7	3
8	8	8	8	8	8	8	8
Special Notes	⑨	⑨	⑨	⑨	⑨	⑨	⑨

⑧ Connect approximately 50-100MMF capacitor in series with resistor R103 across horizontal yoke terms. #3 and #7.
⑨ Reverse AFC winding if picture is out of phase

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI	SEC	Sutchell-Carlson PART No.	REPLACEMENT DATA Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T5	10K CT	3 4Ω	T-110	21903	A-3839	A-3823	34B81	S-53X	

SPEAKER

ITEM No.	TYPE	SIZE	FIELD	V C IMP	REPLACEMENT DATA Sutchell-Carlson PART No.	QUAM PART No.	NOTES
SP1		6"	PM	3-4Ω		W-104	6A1
SP2		10"	PM	3-4Ω		W-108	10A81

COILS (RF-IF)

ITEM No.	USE	Sutchell-Carlson PART No.	REPLACEMENT DATA MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L1	Dual Input IF Trap	T-118				
L2	1st Video IF	T-121				
L3	FU. Choke		19-1001			1.8 Microhenries
L4	Red. Video IF	T-123				
L5	3rd. Video IF	T-122				
L6	4th. Video IF	T-124				
L7	Dual Output IF Trap	T-119				
L8	Series Peaking Coil	L-106				
L9	Series Peaking Coil	L-104	19-3126		6153	12 Microhenries
L10	Series Peaking Coil	L-101	19-4260	TV-187	6173	135 Microhenries
L11	Series Peaking Coil	L-111	19-3260 *	TV-186 *	6185 *	235 Microhenries wound on 33K resistor 325 Microhenries wound on 10K resistor

SETCHELL-CARLSON MODELS 571, 572, 573, 5701, -T, 5702, -T, 5703 (Ch. 157 RP)

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (cont)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L12	Shunt Peaking Coil	L-102	19-3300 ▲		6155 ▲	300 Microhenries wound on 22K resistor
L13	1st. Sound IF	L-105		TV-154		
L14	2nd. Sound IF	T-109	17-3495	TV-113	6203	
L15	Ratio Det.	T-104	17-3497	TV-115	6205	Tertiary winding -.5Ω
L16	AM Ant. Coil	L-107				
L17	AM RF Trans.	T-113				
L18	AM Osc. Coil	T-114	14-1055			Tapped ② .5Ω
L19	1st. AM IF	T-115	16-6758	BC-352	12-C1	
L20	2nd. AM IF	T-115	16-6758	BC-353	12-C2	

* Parallel with 10K resistor.
▲ Parallel with 22K resistor.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	Setchell-Carlson PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L21	.220A	26Ω	1.3 HY	L-108	C5040 ①	C-2994 ①	C-2327 ①	26C44	C-23X

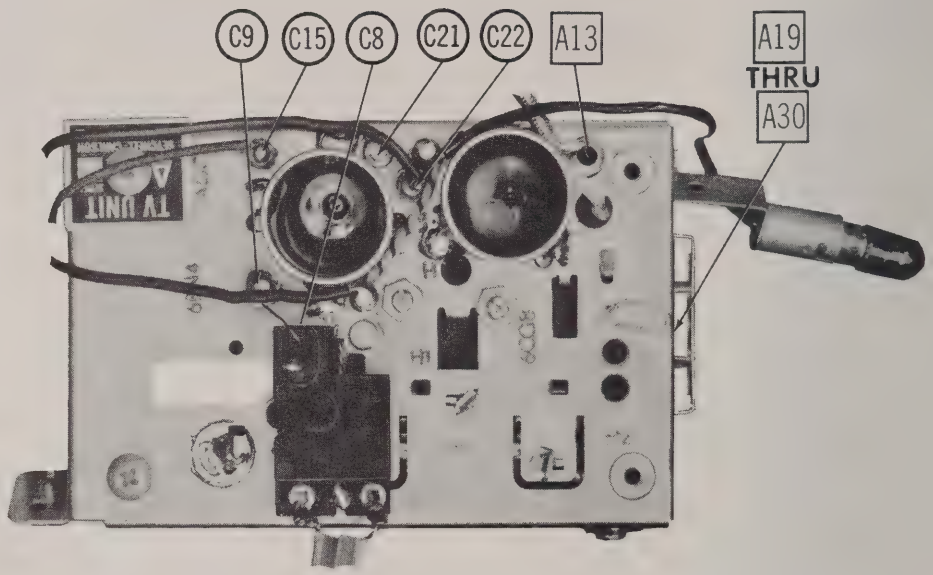
① Drill one new mounting hole.

FUSES

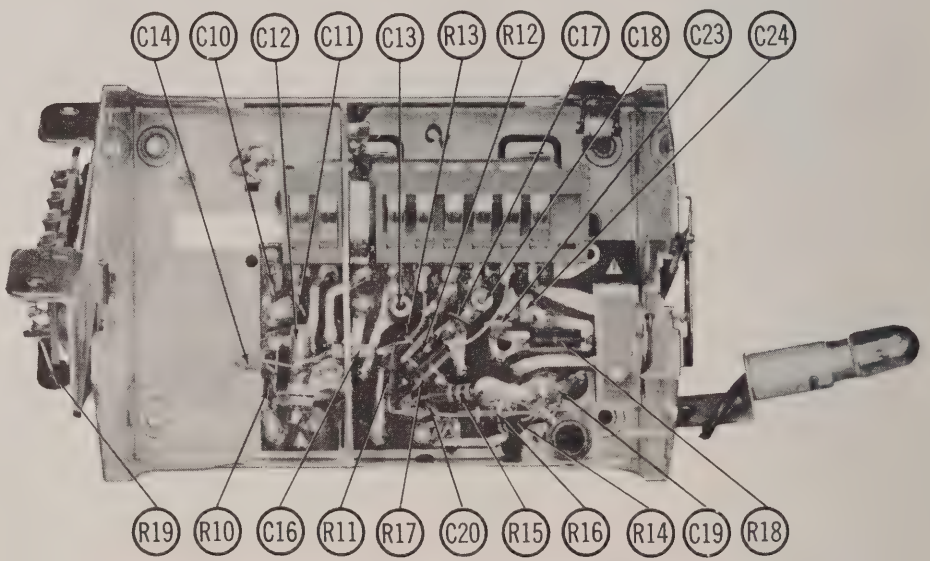
ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Setchell-Carlson PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	C	2½A 250V	F-103	F-102	33202.5 (C-2½A)	346006	C 2½	HC 1 3/4 to 2 1/2

MISCELLANEOUS

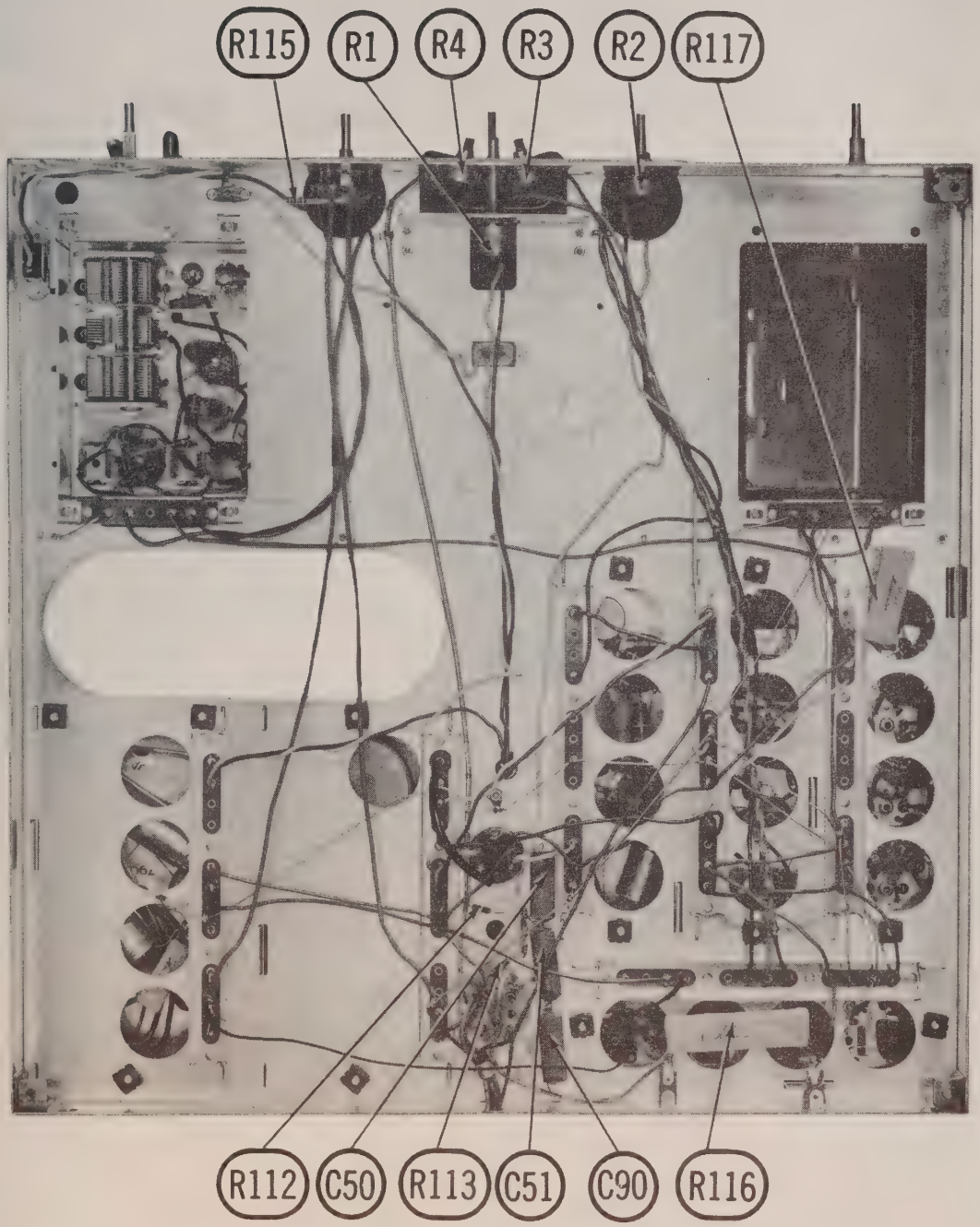
ITEM No.	PART NAME	Setchell-Carlson PART No.	NOTES
M2	Pilot Light		#44 Type, Radio
M3	Pilot Light		#44 Type, TV
M4	Pilot Light		#44 Type, Phono
M5	Tuner		Standard Coil part # N-4038.
M6	Tuning Cap.	C-114	3 Gang (Ant. Section 25-481MMF, RF section 25-473MMF, Osc. Section 25-190MMF
M7	Switch	TV-147	Radio-TV-Phono, Rotary wafer type (3P3P)
M8	Centering Device	Y-102	Includes rear yoke cover
M9	Ion Trap		
M10	Width Sleeve	Y-103	
	Safety Glass	G-109	Models 571, 572, 573
	Mask	G-104	21" Models
	Mask	G-106	27" Models
	Knob	K-120	Large radio tuning, contrast
	Knob	K-121	Med. On-off Volume, contrast
	Knob	K-122	Tone
	Knob	K-123	Radio Dial Rim
	Knob	K-124	Channel Selector
	Knob	K-125	Fine Tuning



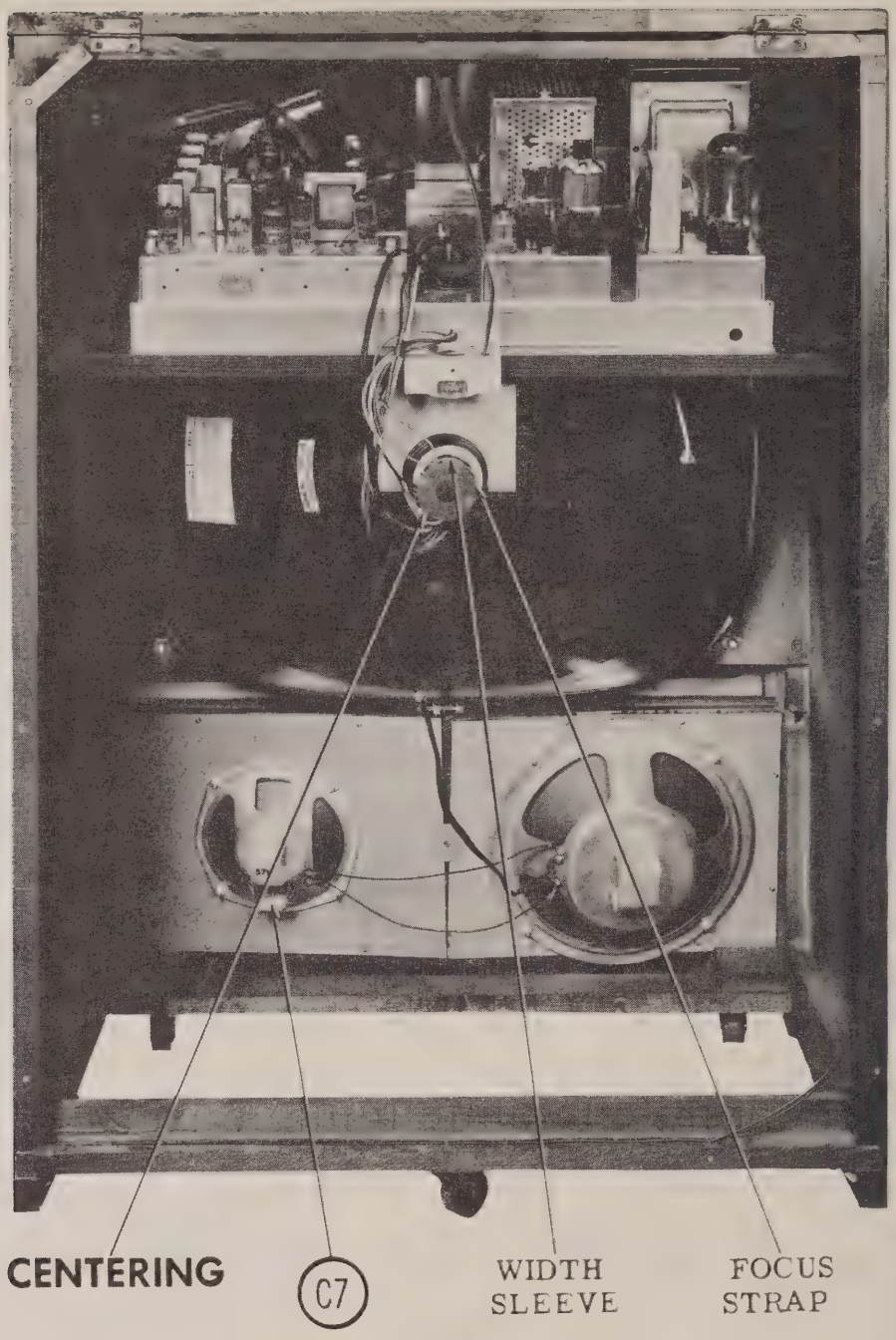
RF TUNER-TOP VIEW



RF TUNER-BOTTOM VIEW



CHASSIS BOTTOM VIEW



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station. Adjust the horizontal hold control until the picture synchronizes horizontally. If the picture cannot be synchronized or the frequency drifts as the set warms up, replace V20 (12AU7A).

SYLVANIA MODELS 2101E, H, RE, TU, 2202E, PI, TU (Ch. 1-607-5, -6)

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

SYLVANIA MODELS 2101E, H, RE, TU, 2202E, PI, TU (Ch. 1-607-5, -6)

SYLVANIA MODELS 2101E, H, RE, TU, 2202E, PI, TU (Ch. 1-607-5, -6)

TRADE NAME	Sylvania Models 2101E, H, RE, TU, 2202E, PI, TU (Ch. 1-607-5, 1-607-6)
MANUFACTURER	Sylvania Electric Prod., Inc., Radio & Tel. Div., 700 Ellicott St., Batavia, N.Y.
TYPE SET	AC Operated AM Receiver With Electric Clock
TUBES (Five)	Types 12BE6 Converter, 12BA6 IF Amplifier, 12AT6 Det.-AVC-AF Amp., 50C5 Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycles — RATING .27 Amp. @ 117 Volts AC (27 Watts Without Clock)
TUNING RANGE—BROADCAST	540KC-1650KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Loop should be maintained in the same relative position to chassis as when the receiver is in cabinet.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400~Mod)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1650KC	"	"	A5	"
3.		Loop	1500KC	Tune to 1500KC signal	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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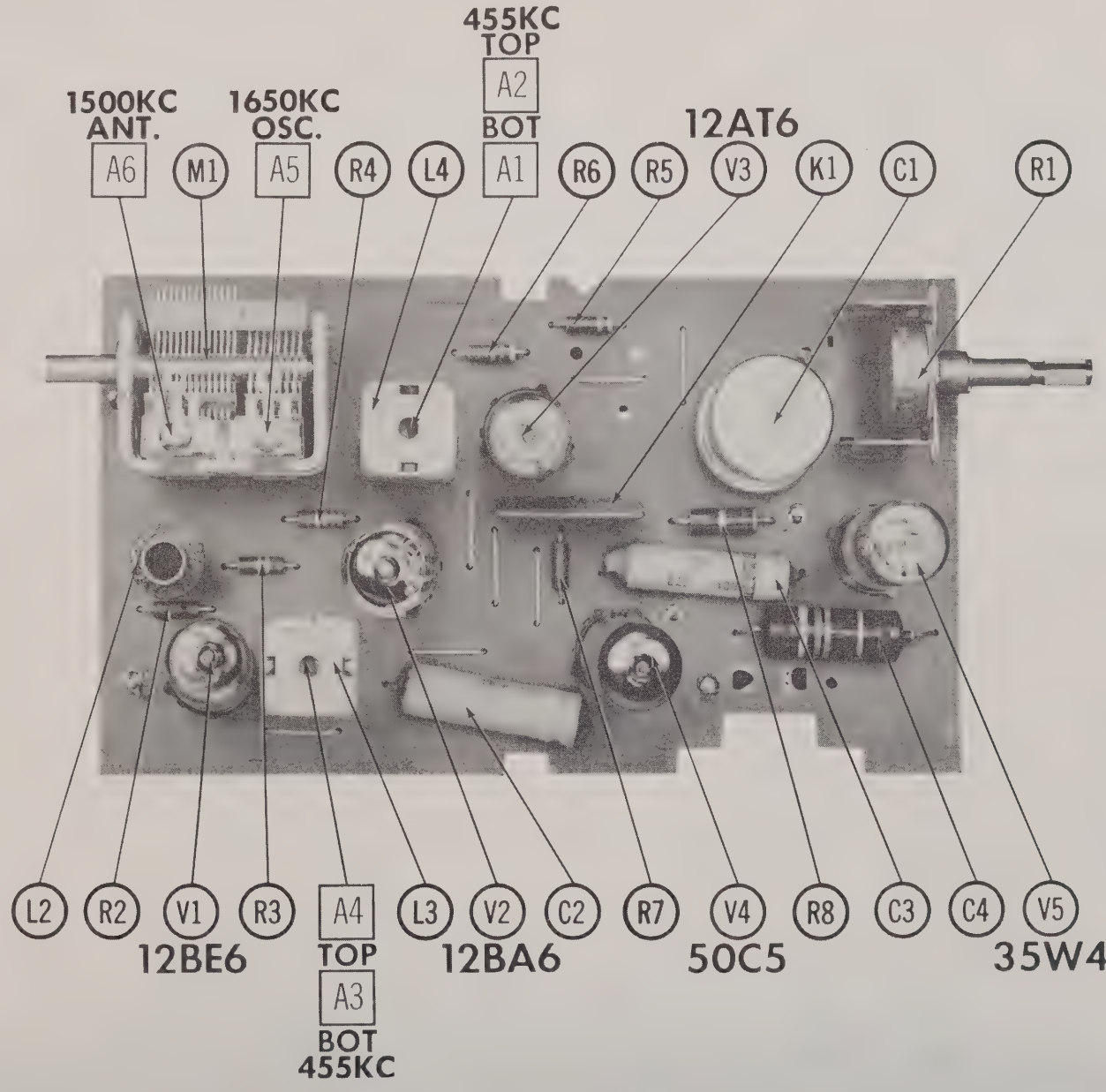


CHASSIS-TOP VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Converter	12BE6	
V2	IF Amplifier	12BA6	
V3	Det.-AVC-AF Amp.	12AT6	
V4	Output	50C5	
V5	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	SYLVANIA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	■70	150	161-2016	AFH2-19	XB0181	FP216	TMD-16	D-085	TVL-2439
B	▲30	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	SYLVANIA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	.047	400	169-0021	BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	
C3	.022	400	169-0022	BPD-02	DD-203	CUB4S22	ED-02	GEM-4122	4TM-S22	
C4	.047	400	169-0021	BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S22	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	SYLVANIA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	500K	½	152-0035					Volume

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	SYLVANIA PART No.	IRC PART No.	
R2	22Ω		181-0220	BTS-22	
R3	22K		181-0223	BTS-22K	
R4	180Ω		181-0181	BTS-180	
R5	3.3Meg		181-0335	BTS-3.3Meg	
R6	47K		181-0473	BTS-47K	
R7	150Ω		181-0151	BTS-150	
R8	1200Ω	1	182-0122	BTA-1200	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	SYLVANIA PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2600Ω	3-4Ω	143-0045	Z1103 ①②	A-3025	A-3332	22S46 ①	S-12X ①	① Drill new mounting hole. ② Tape tap on primary winding.

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	SYLVANIA PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	539-0415	4A07	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		SYLVANIA PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Ant.	582-0027				Note 1
L2	Osc. Coil	113-0033				
L3	Input IF	121-0027	16-6780	BC-356	13-PC1	
L4	Output IF	121-0027	16-6780	BC-357	13-PC2	

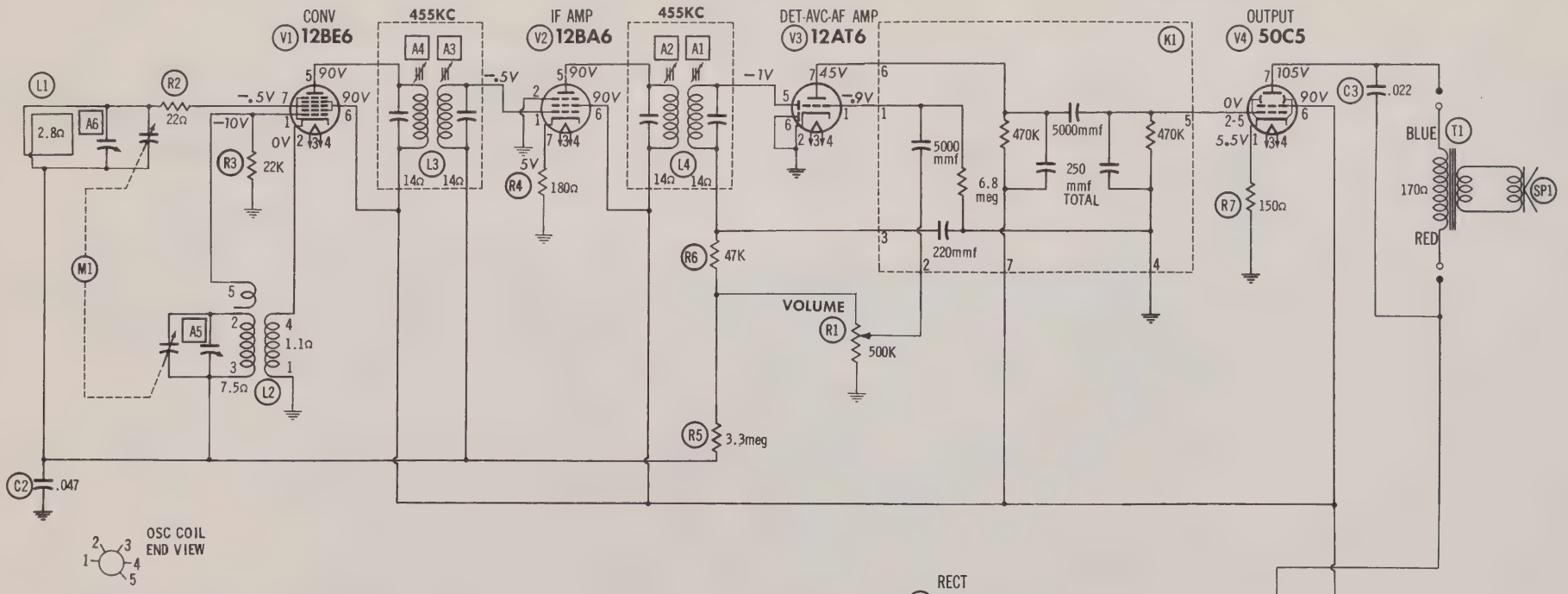
Note 1. Part #582-0026 used in Model 2101 series.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	SYLVANIA PART No.	REPLACEMENT DATA	
K1	Det.-Audio Net.	5000MMF, 220MMF, 5000MMF, 250MMF, 470K, 470K, 6.8Meg	190-0021	Aerovox Centralab Cornell-Dubilier Erie Sprague	PA-113-2 PC-151 116TM2 1408-02 DT-2

MISCELLANEOUS

ITEM No.	PART NAME	SYLVANIA PART No.	NOTES
M1	Tuning Cap.	170-0019	Two Gang
M2	Clock		
	Crystal	717-0003	Clock, Model 2101 Series
	Knob	741-0039	Tuning, Model 2101E
	Knob	741-0034	Tuning, Model 2101H
	Knob	741-0032	Tuning, Model 2101RE
	Knob	741-0033	Tuning, Model 2101TU
	Knob	741-0036	Tuning, Model 2202E
	Knob	741-0029	Tuning, Model 2202PI
	Knob	741-0035	Tuning, Model 2202TU
	Knob	740-0114	Volume, Model 2101E
	Knob	740-0126	Volume, Model 2101H
	Knob	740-0124	Volume, Model 2101RE
	Knob	740-0125	Volume, Model 2101TU
	Knob	740-0128	Volume, Model 2202E
	Knob	740-0118	Volume, Model 2202PI
	Knob	740-0127	Volume, Model 2202TU
	Knob	740-0119	Clock Control, Model 2101E, H, RE, TU
	Knob	740-0120	Clock Control, Model 2202E
	Knob	740-0136	Clock Control, Model 2202PI
	Knob	740-0138	Clock Control, Model 2202TU
	Knob	740-0115	Sleep Control, Model 2202E
	Knob	740-0135	Sleep Control, Model 2202PI
	Knob	740-0137	Sleep Control, Model 2202TU
	Cabinet	813-0095	Model 2101E
	Cabinet	813-0099	Model 2101H
	Cabinet	813-0097	Model 2101RE
	Cabinet	813-0098	Model 2101TU
	Cabinet	813-0101	Model 2202E
	Cabinet	813-0096	Model 2202PI
	Cabinet	813-0100	Model 2202TU



1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to commom negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	1.1Ω	12Ω	25Ω	†1200Ω	†1200Ω	3.8Meg
V2	12BA6	3.8Meg	0Ω	25Ω	38Ω	†1200Ω	†1200Ω	180Ω
V3	12AT6	6.8Meg	0Ω	12Ω	0Ω	550K	0Ω	†470K
V4	50C5	150Ω	470K	38Ω	90Ω	470K	†1200Ω	†170Ω
V5	35W4	NC	NC	90Ω	110Ω	110Ω	105Ω	20K (Min)

† MEASURED FROM PIN 7 OF V5.
NC NO CONNECTION

THROUGH CAMS AND LINKAGES, ONE SW. PERFORMS ALL FUNCTIONS OF OFF, ON, AUTO, AND SLEEP

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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PROPERTY OF
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3924 MEADE ST.
DENVER, COLORADO

ZENITH MODELS
Z510G, R, W (Ch. 5Z10)

ZENITH MODELS
Z510G, R, W (Ch. 5Z10)

TRADE NAME	Zenith Models Z510G, Z510R, Z510W (Ch. 5Z10)
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Ill.
TYPE SET	AC-DC Operated AM Receiver
TUBES (Five)	Types 12BE6 Converter, 12BA6 IF Amplifier, 12AT6 Det.-AVC-AF Amp., 50C5 Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-DC
RATING	.28 Amp. @ 117 Volts AC (28 Watts)
TUNING RANGE—BROADCAST	535-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Loop should be maintained in the same relative position to chassis as when the receiver is in cabinet.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.5MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400∿Mod)	600KC	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation. Tuning wrench part #68-26 may be used to make adjustment.
2.		Loop	1600KC	1600KC	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1400KC	1400KC	"	A6	"

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PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Converter	12BE6	
V2	IF Amplifier	12BA6	
V3	Det. -AVC-AF Amp.	12AT6	

ITEM No.	USE	TYPE	NOTES
V4	Output	50C5	
V5	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	ZENITH PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	60	150	22-2537	PRS150V40 2020	BBRT42215	TCT3114	TDLT-4	FMT-310	TVA-3448
B	20	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	100		22-5	BPD-0001	DD-101	L10T1	ED-100	UC-531	5GA-T1	
C3	10000		22-3	BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C4	.047	200	22-279[3]	BPD-05	DF-503	CUB2S47		GEM-4147	2TM-S47	
C5	10000		22-3	BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C6	470		22-6	BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C7	10000		22-3	BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C8	10000		22-3	BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C9	.047	200	22-2792	BPD-05	DF-503	CUB2S47		GEM-4147	2TM-S47	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	ZENITH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	1Meg	1/2	63-2972	B-69	A47-1Meg-S	Q11-137	U54	Volume
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			KB-1	SWE-12	76-1	US-26	

RESISTORS

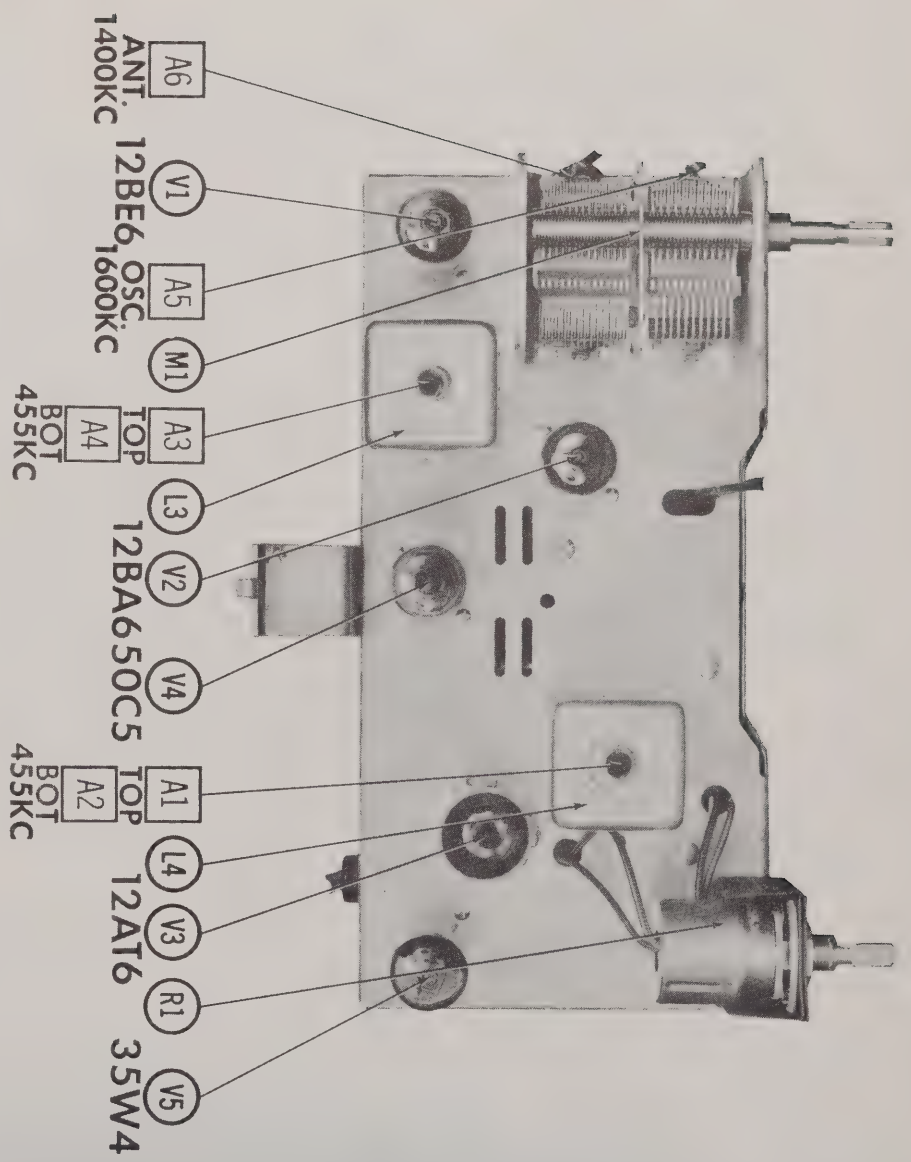
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	ZENITH PART No.	IRC PART No.	
R2	22K			BTS-22K	Note 1
R3	100Ω			BTS-100	
R4	2.2Meg			BTS-2.2Meg	
R5	470K			BTS-470K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	ZENITH PART No.	IRC PART No.	
R6	4.7Meg			BTS-4.7Meg	
R7	470K			BTS-470K	
R8	150Ω			BTS-150	
R9	1000Ω	1		BTA-1000	

Note 1. Some versions may use 68Ω in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	ZENITH PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2300Ω	3-4Ω	95-1380	Z1101	A-3025	A-3332	26S58 ①	S-12X	① Use original channel mounting frame

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	ZENITH PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	49-749	4A07	

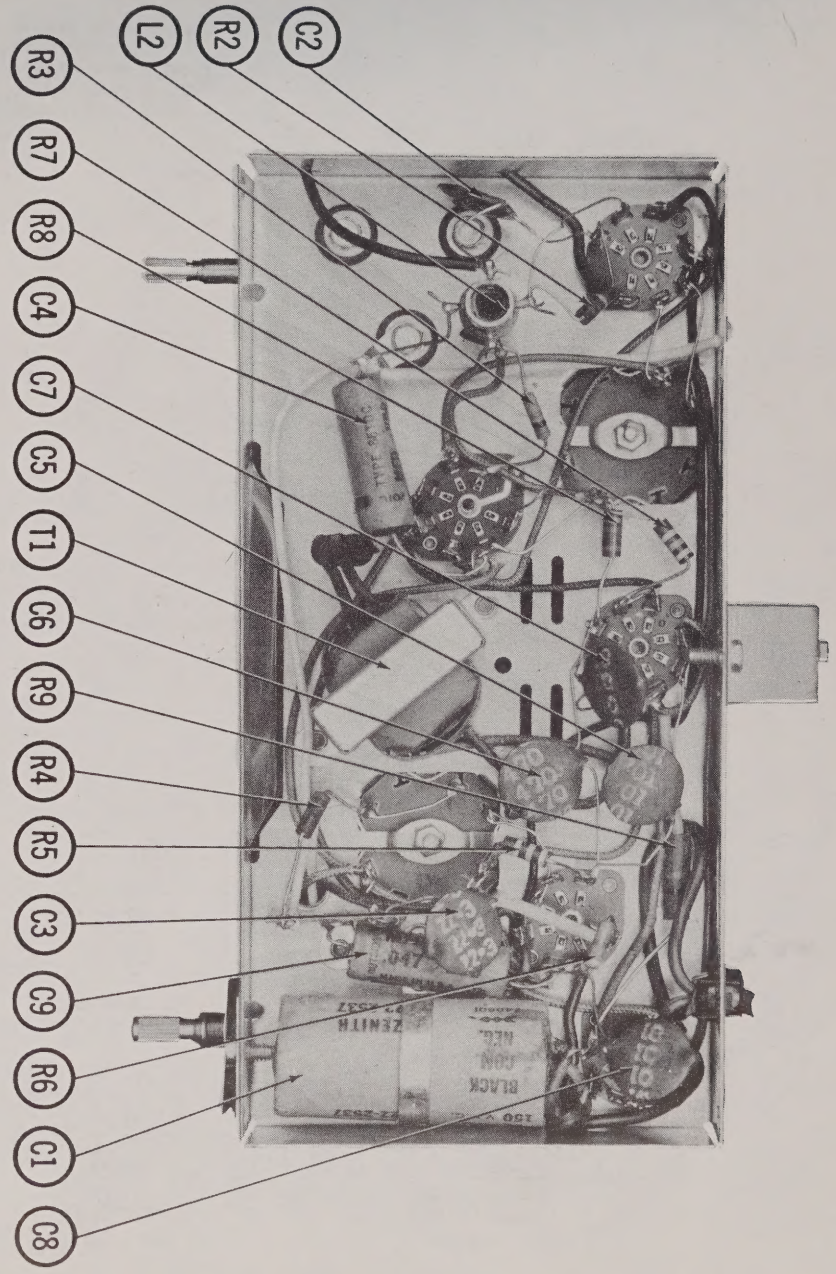
COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		ZENITH PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Antenna	S-21362				Includes cabinet back
L2	Osc. Coil	S-20686				
L3	Input IF	95-1101	16-6666	BC-368	012-C1	
L4	Input IF	95-1102	16-6770 *	BC-355 *	12-C6 *	* Use adaptor plate

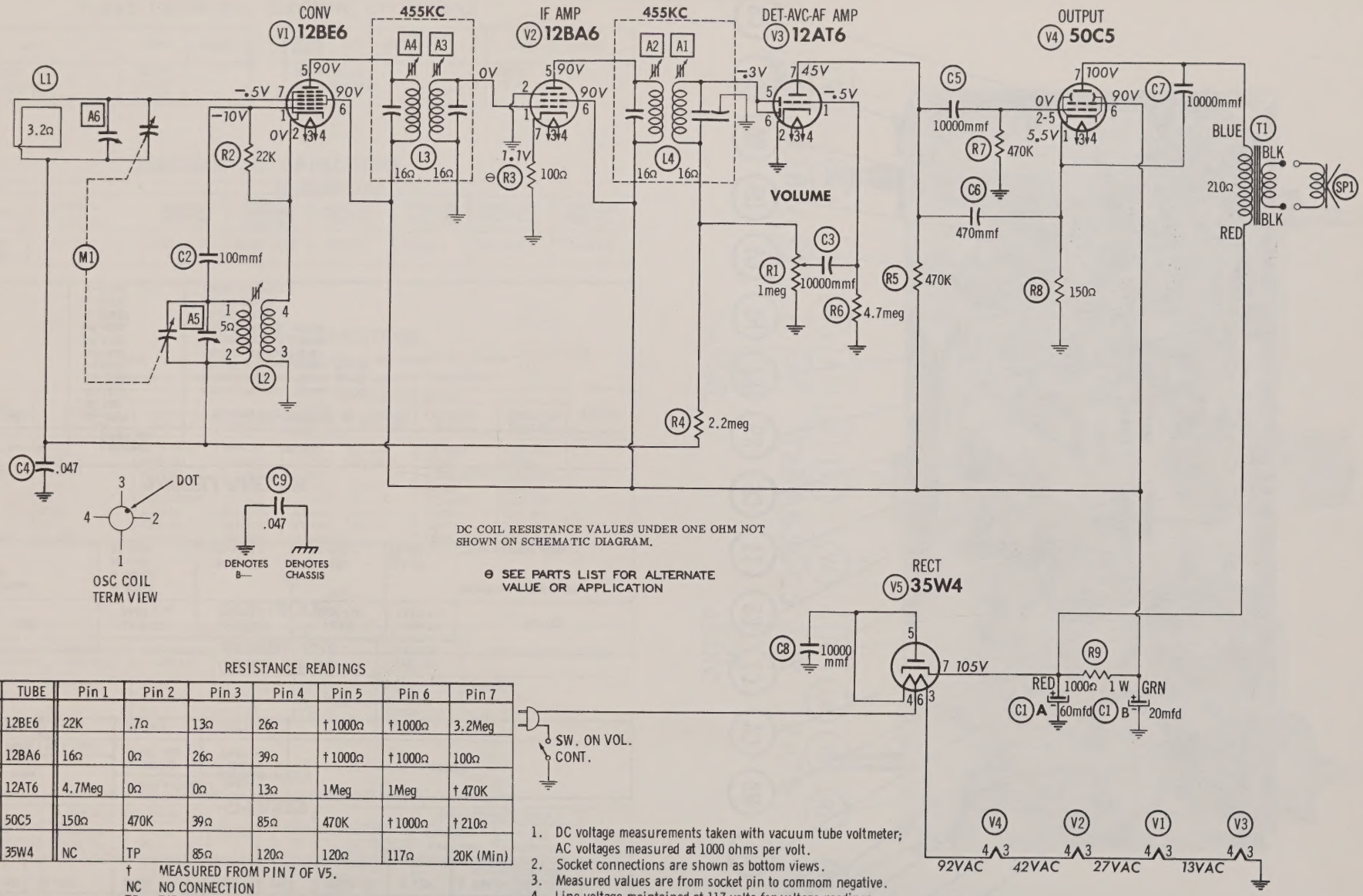
MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M1	Tuning Cap.	22-2899	Two gang (30-485MMF, 28-170MMF)
	Pointer	59-320	
	Knob	46-1624	On-off-volume, Model Z510G
	Knob	46-1623	On-off-volume, Model Z510R
	Knob	46-1625	On-off-volume, Model Z510W
	Knob	46-1629	Tuning, Model Z510G
	Knob	46-1628	Tuning, Model Z510R
	Knob	46-1630	Tuning, Model Z510W
	Cabinet	S-40882	Model Z510G
	Cabinet	S-40881	Model Z510R
	Cabinet	S-40883	Model Z510W

CHASSIS—BOTTOM VIEW



ZENITH
MODEL Z510G (Ch. 5Z10)



DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	.7Ω	13Ω	26Ω	†1000Ω	†1000Ω	3.2Meg
V2	12BA6	16Ω	0Ω	26Ω	39Ω	†1000Ω	†1000Ω	100Ω
V3	12AT6	4.7Meg	0Ω	0Ω	13Ω	1Meg	1Meg	†470K
V4	50C5	150Ω	470K	39Ω	85Ω	470K	†1000Ω	†210Ω
V5	35W4	NC	TP	85Ω	120Ω	120Ω	117Ω	20K (Min)

† MEASURED FROM PIN 7 OF V5.
NC NO CONNECTION
TP TIE POINT

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to commom negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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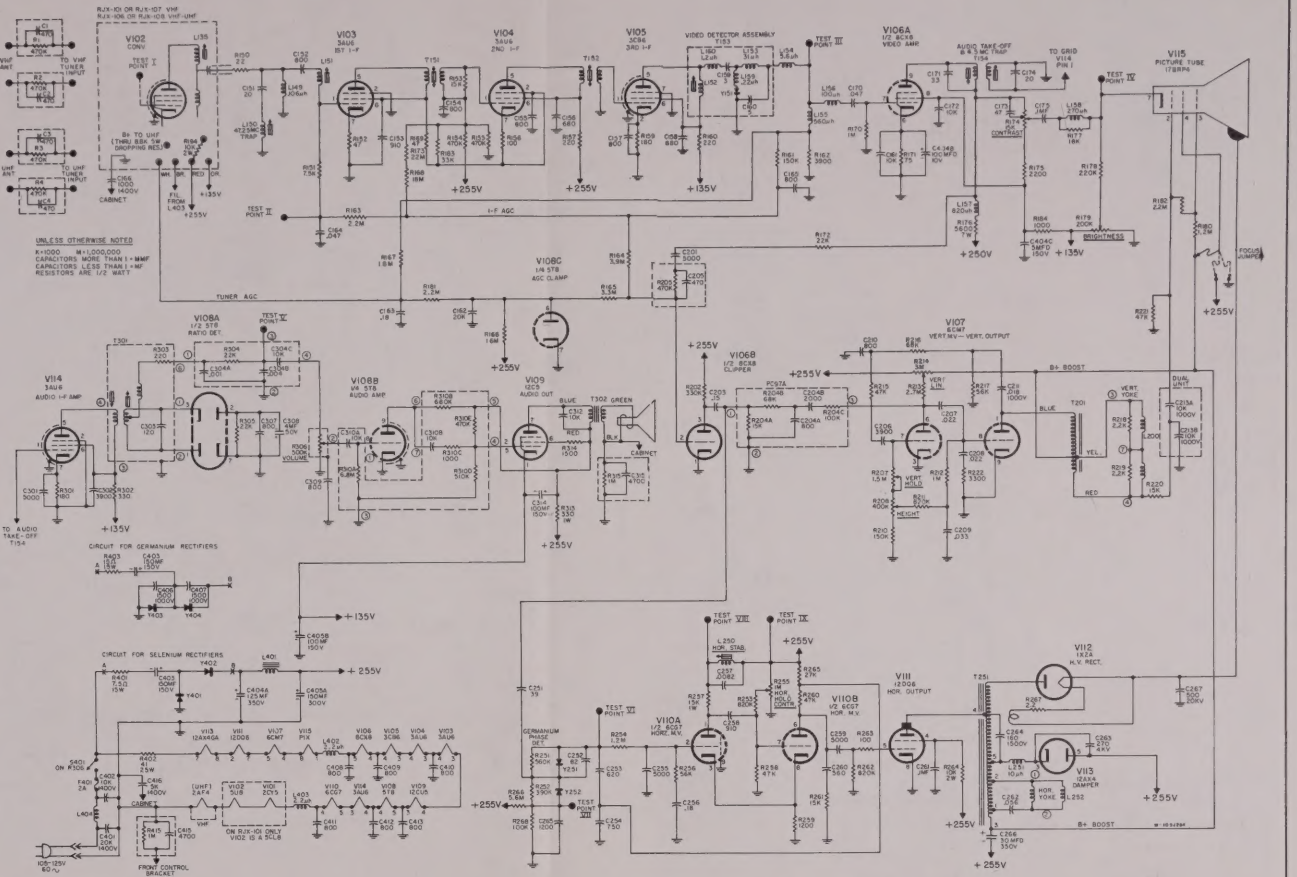
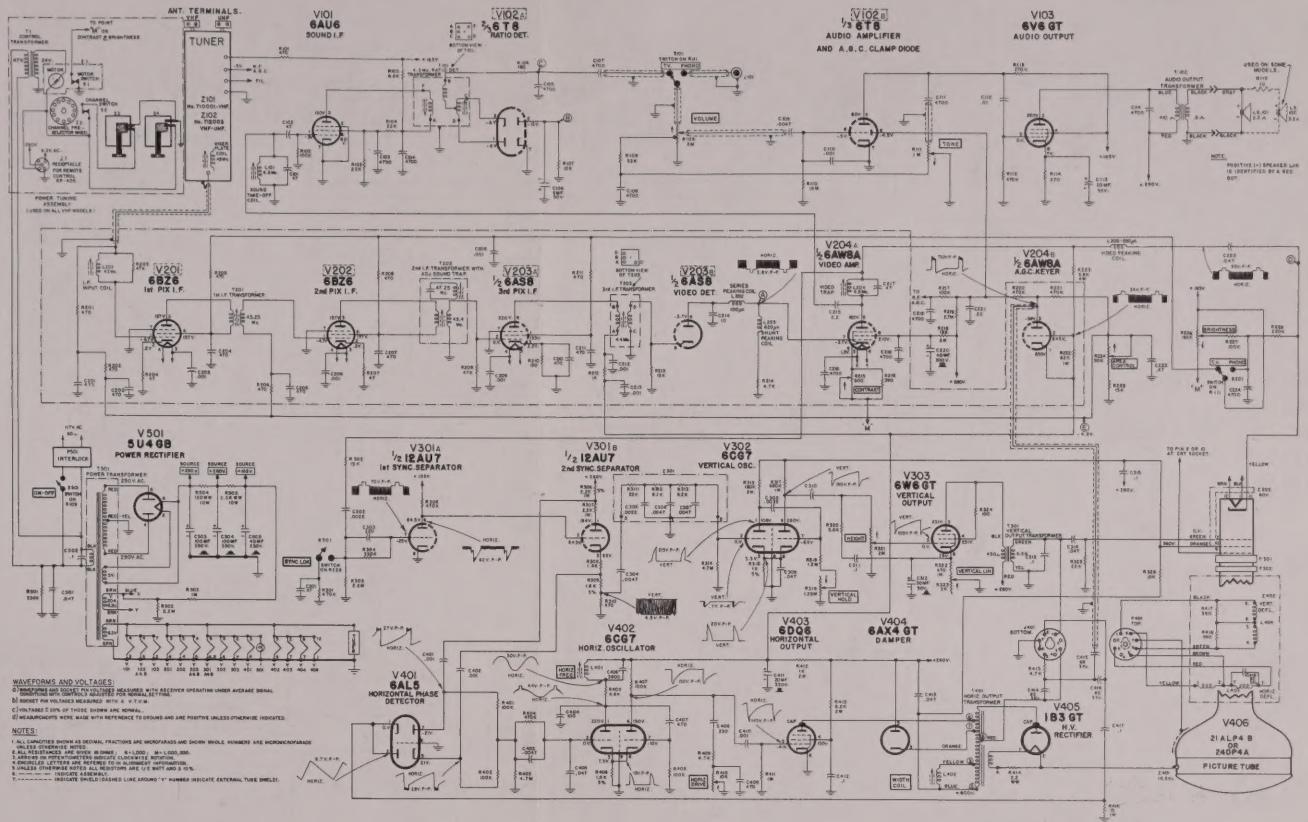
GENERAL ELECTRIC
MODELS
17P1329 ("M3" Chassis)
17P1330 "
17P1331 "



SCHEMATIC COURTESY OF GENERAL ELECTRIC COMPANY

HOFFMAN

MODELS	CHASSIS
3234, U	331, U
3261, U	"
3271, U	"
3304, U	"


ANT. TERMINALS.
TUNER
V101 6AU6 SOUND I.F
V102A 1/2 6T8 RATIO DET.
V102B 1/2 6T8 AUDIO AMPLIFIER AND A.G.C. CLAMP DIODE
V103 6V6 GT AUDIO OUTPUT
V201 6BZ6 1st PIX I.F.
V202 6BZ6 2nd PIX I.F.
V203A 1/2 6AS8 3rd PIX I.F.
V203B 1/2 6AS8 VIDEO DET.
V204A 1/2 6AW8A VIDEO AMP.
V204B 1/2 6AW8A A.G.C. KEYER
V501 5U4GB POWER RECTIFIER
V301A 1/2 12AU7 1st SYNC. SEPARATOR
V301B 1/2 12AU7 2nd SYNC. SEPARATOR
V302 6CG7 VERTICAL OSC.
V303 6W6GT VERTICAL OUTPUT
V402 6CG7 HORIZ. OSCILLATOR
V403 6DQ6 HORIZONTAL OUTPUT
V404 6AX4 GT DAMPER
V401 6AL5 HORIZONTAL PHASE DETECTOR
V405 1B3 GT H.V. RECTIFIER
V406 21ALP4 B OR 24QP4A PICTURE TUBE
WAVEFORMS AND VOLTAGES:
NOTES:

SCHEMATIC COURTESY OF HOFFMAN RADIO - DIVISION OF HOFFMAN ELECTRONICS CORPORATION

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E. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

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